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(dates are tentative)

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Annual Review and Forecast..Feb. 6
Microscopic Fiber Study....Feb. 13

COTTON

Warping for Satisfactory Slashing and Weaving.. ..Jan. 23
Marquisette Weaves ....Jan. 30
Spinning Improvements ....Feb. 6

WOOL

Quality in Tops..... .....Jan. 16
Carpet Design ....Jan. 23
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SILK

Loom Shipping and Driving..Jan. 30
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Adjusting Lay Motion..... Mar. 5

RAYON

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Processing Rayon Fabrics..Feb. 20

KNITTING

Full-Fashioned Costs.....Jan. 16
Year's Technical Progress..Feb. 6
Design and Figure Knitting on Circular Machines.....Feb. 13

PROCESSING

Testing Dye Substantivity..Jan. 16
Increasing Dye Penetration..Jan. 23
Job Standardization in Bleachery ....Jan. 30

ENGINEERING

Electrical Review .....Jan. 16
Preventing Vibration .....Feb. 13
Unit Heaters ....Mar. 5

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Textile World

ESTABLISHED 1868

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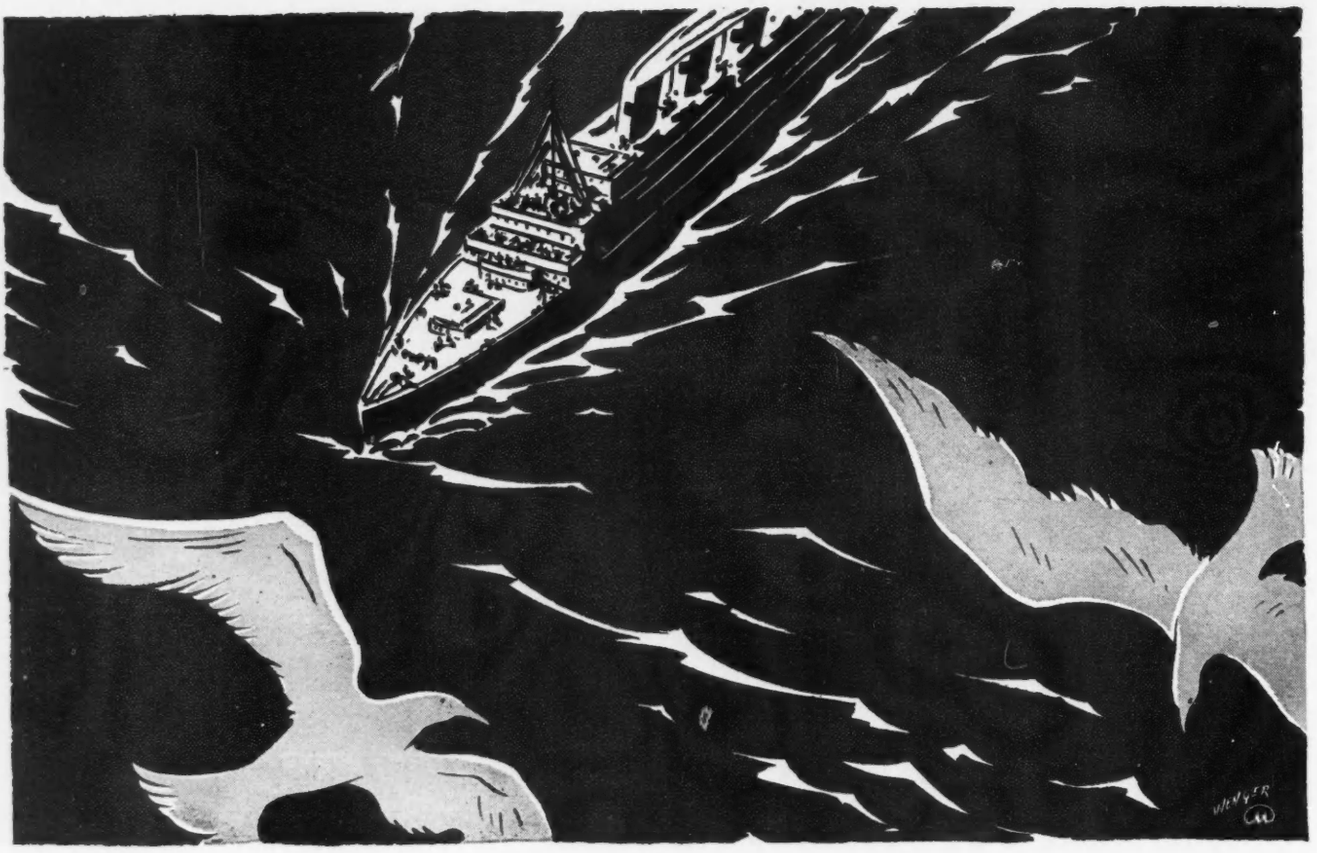

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Editor: Douglas G. Woolf

Prevent Further Banking Crises!

TO MOST of us, accustomed to measuring the depression in terms of the reduction in our own salaries or other income, the much-discussed "banking situation" is apt to be merely another abstract phase of that depression. It is only when we ourselves or our family or our friends become involved in a bank failure that it becomes as real to us as a cut in wages or the passing of a dividend. Then, too, we come to the realization that the closing of the bank or banks involved is merely an incident; that the paralyzing factor is the fear which arises regarding other banks in the same community.

During the last ten days, certain textile sections of the Carolinas have witnessed a new demonstration of this fact. Distressing as is the closing of the particular institutions, still more serious is the psychological aftermath.

▼

Fortunately, there is a remedy in sight. There is pending in Congress a bill which would establish the so-called Reconstruction Finance Corporation, intended to function in much the same way as did the War Finance Corporation during the post-war collapse in 1921.

Briefly, this corporation would have at its disposal a half billion dollars of Government money and the authority to borrow an additional two billion. It would be empowered to lend money to banks whose "frozen assets" imperil their stability; to aid railroads which are unable to meet interest payments; to assist cooperative marketing organizations, and to finance the exportation of certain farm commodities such as cotton, wheat, etc.

However, its most important potential function in the present emergency is to restore confidence in our banking institutions—without which no progress out of the depression can be expected.

▼

It is quite possible that, by the time this issue reaches its readers, the bill in question will have been reported out of committees, and that early action may be expected. However, since legislative machinery is always susceptible to monkey-wrenches, and since the supply of monkey-wrenches seems always more than adequate, we believe that every textile manufacturer would be performing a public service if he would bring pressure to bear upon his Senators and his Representative, urging immediate passage of the bill.

There is, or should be, no politics involved. Although suggested by the Administration, the Reconstruction Finance Corporation plan has a significance which transcends all party considerations. Out of all the legislative remedies proposed, it stands as the most important single possibility which is at once both immediately practicable and potentially effective.

Its establishment by Congress within the next week or two would help to prevent further occurrences such as the disasters which have come to the Carolinas recently.

The Week in Textiles

as Reflected in This Issue

General

Upholstery Industry Survey

Improved merchandising is recommended for the upholstery industry of Philadelphia in a survey conducted by the Wharton School of the University of Pennsylvania. The survey deals also with labor policies, production efficiencies as revamping of designing and selling policies. *(page 20)*

Microanalysis of Fibers

A continuation of the series describing the uses of the microscope in the textile industry deals with the manner in which microanalytical methods can be used in studying natural and synthetic fibers. Simplified methods of cross sectioning have aided this work. *(page 28)*

Southern Mill Construction

North Carolina leads the Southern States in expenditures on new textile mill facilities during 1931 according to a survey made by the southern editor of TEXTILE WORLD. Figures are given on estimates for the principal States. *(page 34)*

Mills Not Involved

Textile firms are reported to be not heavily involved in the recent bank closings in the Carolinas. Certain payroll accounts are said to be tied up, but plans are already afoot to reopen the banks which closed to conserve their assets. *(page 34)*

Improved Cone Belt

Continuously wound, strong whip cords, each separated from each other and embedded in rubber are used in the construction of a new type of cone belt. *(page 40)*

Cotton

Cotton Baling for Cotton

Net weight basis for cotton sale is gaining impressive support according to latest word from the South. A standard tare law has been suggested to Congress which specifies a fixed allowance for tare for each sort of bale covering used. The International Federation of master spinners is urging the use of cotton baling material for cotton. *(page 25)*

Long-Draft Aprons

Installation of new equipment facilitates the manufacture of good-quality, reasonably priced long-draft aprons. Improved gripping surfaces are secured. *(page 41)*

Cotton Steadies

After a weak beginning of the new year, cotton firmed up and was fairly steady. Traders see betterment in the international financial situation and prospect of remedial legislation at home is relieving them of some of the anxieties lately current. *(page 49)*

Yarns in Readjustment Period

Cotton yarns, though so quiet as to leave market quotations rather nominal, seem to be in another readjustment period with prices sliding off fractionally. Sellers have been meeting buyers' low bids in some cases, but it remains to be seen whether much yarn can be bought at those figures. There is reported to be better interest in combed and mercerized yarn in southern centers. *(page 49)*

Goods Market Selective

Cotton goods trading was highly selective this week, with fairly good sales of 4-yard 80 squares and 4.10-yard 100x60s broadcloths and the rest of the gray goods market pretty flat. *(page 53)*

Wool

Change in Shade After Sponging

The practice of topping off with an acid dye to obtain the required depth of shade on worsted fabrics often results in a tendency of the fabric to change shade on sponging. It must be remembered that this topped color is not fast to steaming. *(page 42)*

Varying the Common Twill

To clarify a recent discussion of the possibilities of varying the common twill, further explanatory notes and diagrams are supplied. *(page 43)*

Subnormal Activity Likely

Subnormal activity in wool goods during early 1932 is foreseen by Dr. L. H. Haney writing in this week's TEXTILE WORLD Analyst. This trend, he says, is in consonance with the two-year cycle in which this market runs and which turned downward last summer. He adds "until consumption increases, the best that may be hoped for is irregular stability of wool prices." *(page 45)*

Wools Hold Firm

Wools open the new year with firmness carried over from the old year. Business is very light but dealers looking forward see lighter supplies ahead than at this time a year ago, and are still hopeful for maintenance of current price levels. *(page 51)*

Yarns Are Neglected

Worsted yarns have remained neglected in the first week of the new year

The Textile Outlook

TEXTILES cannot lift themselves up at the present time by their own bootstraps. They must get a grip on a substantial outside prop such as general business improvement. The textile markets are all ready to go ahead, but while buyers anxiously take their cues from foreign news and financial reports there must of necessity be a waiting period. The first week of the new year has given little nourishment to those who expected gains right after Jan. 1. Cotton goods sellers find their market highly selective, with some few fabrics selling well but most scrupulously neglected. The weakness of cotton on Monday was a disappointment which its recovery later in the week failed wholly to assuage. Wool goods move in small lots with caution and hand-to-mouth operations the keynote. Steadier raw silk has brought more buying interest into the goods market and sellers are resisting pressure from buyers for lower prices. Knit goods sellers are hopeful. Hosiery expects fair trade for spring; underwear is uncertain about opening the new fall season; sweaters have fair advance business but bathing suits are still backward.

with spinners pinning their hopes for stability on the maintained prices of the raw material. Some few yarn lots have been let out sub-market. *(page 49)*

Activity in Worsteds

Some mills enjoyed good spot call for men's worsteds this week, but complained of pressure for quick delivery. *(page 53)*

Knitting

Care in Hosiery Mill Operation

Cooperation of employees in a knitting mill will go far to reduce unnecessary waste and help the plant to get back on a paying basis. *(page 27)*

Outerwear and Underwear

Recent developments in circular knitting machinery include more feeds per machine, finer gauges, larger cylinders, and increased designing capacity. The Swiss rib is becoming more popular in sweater bottoms and women's underwear. *(page 18)*

What's Best in Mesh Hosiery?

Mills entering mesh hosiery production are uncertain which price range to focus upon. Current trends indicate most profitable lines will be those retailing at from $1.35 to $2.00. *(page 55)*

Underwear Selling Ahead

Four weeks is "ahead" these days in the underwear industry, and mills are encouraged by tendency toward covering for late February needs. *(page 55)*

Crickets in Demand

Sweater mills have a fair quantity of February cricket business booked; call stresses novelties. *(page 55)*

Silk

Testing for Throwster's Clearance

In order that the value for the correct throwster's clearance may be obtained, it is necessary to test both the raw and thrown silk on a conditioned basis. The proper method of determining this figure is explained by means of a typical example. *(page 26)*

Tendering of Silk Hose

The development of irregularly placed tender spots in silk hose may arise from a number of different sources; the most common of these are outlined. The use of formaldehyde in excessive quantities should be discouraged. *(page 42)*

Warp Streaks in Fabric

A strained reed is determined as the cause of the presence of warp streaks in a silk fabric. Replacement of the reed is the only satisfactory remedy. *(page 42)*

Canton Crepe Has Shiny Ends

A reed that is free to move is essential in weaving silk crepes. Single-end wrong draws and chafing of the reed will produce an imperfect fabric having a streaky effect. *(page 43)*

Throwsters, Spinners Hopeful

Throwsters and spinners rely on current broadsilk openings to stimulate fabric production which in turn would aid yarn movement. Both markets are quiet. *(page 51)*

Firm on Fabric Prices

Broadsilk mills have decided to base spring prices on $2.25 silk to offset cutters' claim that raw silk reduction be reflected in current goods. *(page 53)*

Rayon

Twist in Acetate Crepe Fabrics

A lack of knowledge of the effect of twist upon the strength and elasticity of acetate yarns has resulted in the appearance on the market of some crepe fabrics having a filling only one fourth as strong as the warp. Figures and charts are presented to show just what effect twist will have on these properties. *(page 22)*

Good New Year for Yarn

The first week of 1932 brought considerable business to rayon producers and spirited buying is looked for this month. Prices are firm. *(page 51)*

Processing

Conditioning Machine

Announcement is made of the development of a new machine for speedily and efficiently restoring the proper moisture content to fabrics which have been subjected to such treatment as pressing, drying, or calendering. *(page 40)*

Finishing of Plaids

The continual holding back of one selvage during the finishing operations will result in the finished fabric having a longer selvage on one side than on the other. This tendency is prevalent because of the desire to keep the plaids square. *(page 42)*

Mill Starts up with Volunteer Workers

IN order to provide employment for a number of jobless textile workers in Camden, Me., John T. Hughes, a mill man of 25 years experience, has tackled a man's size job at the old Mount Battie Mill which has been idle for about two years. The owners of the property, Job H. Montgomery and W. Frank Bisbee, let him have the use of the plant at a nominal rental. Gathering a dozen or more unemployed textile workers of this town Mr. Hughes rebuilt the dye house and put a new roof on the mill building proper. The workers gave their time to put the mill in order so that it could be operated.

He then made a connection with New York agents to sell the goods he proposed to turn out. The looms have now been started and are running on boys' suitings. Last week the mill shipped 29 cuts or about 1,600 yards of finished material. Forty operatives are employed.

The Mount Battie Mill was built about 40 years ago and is equipped with 40 looms and 8 sets of cards and when working at capacity employs about 100 hands. Today 14 looms are running and Mr. Hughes is confident that the number will increase until all are again in operation. He is paying wages out of the return on the cloth manufactured.

The Business Outlook

ACCELERATED action by Congress on the Reconstruction Finance Corporation in response to public and Presidential pressure, reassuring rumors of better agreement between Britain and France as the reparations conference approaches, early evidence of fairly vigorous reinvestment demand in security markets, and a general lull in output of bad news have helped to lend a more hopeful color to the first week of the new year. Statistical records covering the holiday weeks are of no special significance except as indicating the extreme and expected slackness of year-end activity. Still there is distinct encouragement in continued steadiness in commodity prices, well sustained levels of power production and carloadings, and recent signs that the usual seasonal rise in steel production is not going to be delayed despite uncertainties of prices and of demand from principal consuming industries. New model automobile output has gained headway and this indefatigable industry is again making its appeal to the starved instincts of a motor hungry American public with irresistibly attractive products.—*The Business Week.*

Obsolescence Touches Lightly on Circular Outerwear and Underwear

Fifth article in second depreciation series*

IN the fifth instalment of this series we visit a branch of the textile industry in which the spectre of obsolescence has made its appearance very dimly. While in nearly all other branches a whirlwind of development in recent years has blown the dust out of many a backward corner and swept countless old machines into the discard, in circular-knitted outerwear and underwear it has done little more than rattle the windows.

The manufacturers of circular-knitted fabrics for outerwear, and particularly for underwear, may therefore sit back comfortably in their easy chairs and worry little about the up-to-dateness of their plants. Whether such a state of affairs and such a frame of mind constitute a healthy condition of things is another matter. We all know that there is too much machinery in the knit-goods industry. We know that overproduction is the basic cause of price cutting and lack of profit. Those of us who have given careful thought to the matter believe that new developments in machinery will provide the quickest and the most effective remedy. This is not only because improved equipment will generally reduce costs, legitimately lower selling prices, and so widen the market—it is mainly because the better equipment will be purchased only by the more efficient mills, with the result that the gap between those mills and their less efficient competitors will be widened. Hence the latter class of plant, with its obsolete equipment and the ruinous competition which it creates, will be dropped from the race.

It is therefore to be hoped that the knit-goods trade will not allow itself to be too easily satisfied with its equipment as it stands today. It is possible, of course, that circular knit-goods machinery is not susceptible of further development; but look at circular hosiery machinery, which has lately been enormously improved, as will be explained in detail in a later article of this series,—are the two classes of machine so radically different? In almost all lines which have recently felt the effects of extensive progress, it was formerly believed that no such development was possible—at least in so limited a time.

In the preliminary work for the preparation of this article, we scoured the industry for mechanical improvements now available to the mills which seem to augur important trends in future development. We encountered a few things which are of some immediate effect. We learned of several very interesting experiments which are quite likely to result in radical improvements eventually. With the exception of the latter items, which it would be confusing as well as difficult to discuss at this early date, we are presenting our findings.

No tendency is more evident than that toward the use of more feeds per machine. The principal advantages in this change include increased production per machine, less labor requirements, smaller power consumption, and reduced floor space. The increase in production would be proportionate to the increase in number of feeds if it were not for the additional time required for starting up the machine and the proportionately greater production lost when the machine must be stopped for attention to one or more feeds. The increase in production made possible by feeding more yarns at one time requires no increase in direct or indirect labor; in floor space; or, under ordinary conditions, in driving power applied.

If the mill does not desire to increase its total production—an indication of wisdom in these times—it may use the additional feeds to eliminate some of its machinery from operation, thus saving labor, floor space, and power. Some knitters object to the use of a large number of feeds on the grounds that it is difficult to obtain and preserve accurate regularity in the cams. It is true, of course, that there is more opportunity for irregularity with a larger number of cams; but it may be argued that the exercise of a little additional care will largely overcome it and that the law of averages will enable the larger number of yarns entering the fabric to obliterate their own irregularity. An increase in the number of feeds widens the range of design possibilities.

About the largest number of feeds considered commercially practical today is 48 on a 36-in. latch-needle pattern-wheel outerwear machine. In underwear 32 feeds on 18-in. latch machines are being used for rayon knitting; but as underwear made from synthetic fiber is now largely giving way to cotton underwear, we learn that some of these 32-feed machines are being reduced to 24-feed. The feeding capacity of some of the machines recently purchased by underwear and outerwear mills is as follows: 32 feeds on a 24-in. jersey outerwear latch machine; 24 feeds on an 18-in. jersey latch machine for pattern work; 20 feeds on a 24-in. underwear latch ribber; 16 feeds on a 22-in. latch underwear ribber; 12 feeds on a 25-in. underwear spring-needle ribber; 8 feeds on a spring-needle plain stitch; 6 feeds on a rotary

*Cotton-yarn machinery was discussed July 4; worsted-yarn machinery, Aug. 1; woolen-yarn machinery, Sept. 5; silk and rayon-throwing machinery, Nov. 7. The next article, to appear shortly, will deal with the processing of raw stock and yarn.

IN TEXTILE EQUIPMENT . . . .

jacquard latch outerwear; and 6 feeds on a spring-needle for eiderdown.

With few exceptions, notably that of the spring-needle ribber, the additional feeds can be supplied to existing machines at an expense very materially less than the cost of a new machine. The change usually requires a new set of cams and auxiliary parts all around. Many knitters believe that the changing over of machines for either new feeding capacity or new gauge is not mechanically so satisfactory as purchasing new equipment, due to the fact that there is likely to be a certain amount of play in refitted machines, resulting in considerable vibration, needle breakage, production of seconds, increased maintenance costs, and slower production. It is seldom, however, that the expense of purchasing new machinery is considered justifiable when the only changes wanted are in feeding capacity or gauge.

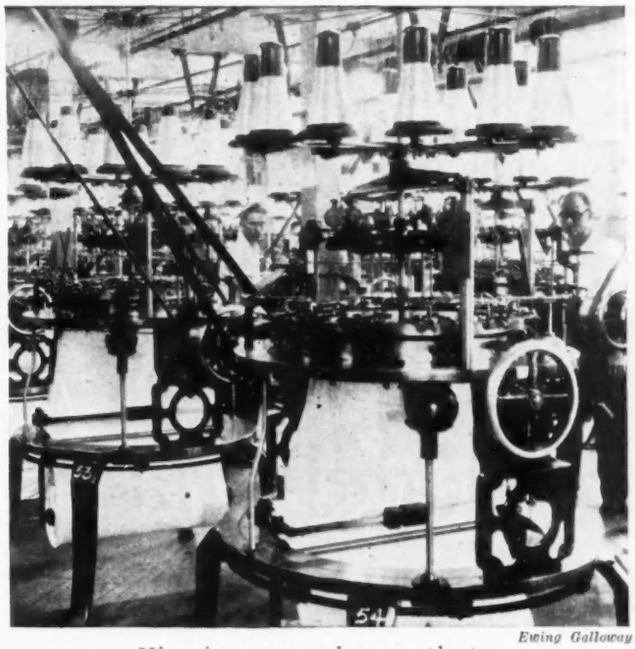
There is some tendency evident in the knit-goods trade toward the use of finer gauges. Some spring-needle machines have recently been changed to 36 cut—new top, needles, and wheels being applied. Latch-needle ribbers may be converted to a finer gauge by changing the cylinder and dial at an expense of one-half the cost of new machines. On one well-known make of the latter type of machine a cut of 16 to 1 is the finest used, although the manufacturer of the machine recommends nothing finer than 14 to 1—and 12 to 1 is most extensively employed. A cut of 10 to 1 on this machine is practically obsolete for cotton underwear.

There is apparently also some tendency toward increased diameters in machines. A new spring-needle ribber with a cylinder 29 in. in diameter is the largest machine of that character ever built. A cylinder 36 in. in diameter seems to be the largest for plain-stitch spring-needle machines generally accepted, although 48-in. machines have been built. Some manufacturers handicapped by the smallness of their ribbers have endeavored with minor success to produce fabrics which could be stretched to greater width.

It cannot be safely said at any given time that types or methods of designing are permanently obsolete. Changes in styles come so rapidly and the taste of the public fluctuates to such an extent that equipment today standing unused may tomorrow be put into service. It is safe only to say that in many lines a large designing capacity is essential and that machines possessing a high degree of flexibility for a wide design range without complication are to be particularly desired.

In the spring-needle field the tendency toward greater number and variety of designs is evidenced by the increasing call for cut pressers of various specifications. Because of the present interest in this subject, TEXTILE WORLD plans to publish in the near future a useful article on this type of designing. Also in the spring-needle trade is found an increasing production of porous-knitted fabrics, requiring special attachments.

A consumer demand for fancy 2x2 ribbed underwear has recently been developed. One of the nationally advertised brands of this Swiss-rib fabric is knitted with the feeds operating in the following rotation: first feed, plain stitch with 150-denier rayon; second and third feeds, plain stitch with 60/2 mercerized yarn; fourth, fifth, and sixth feeds, tuck stitches on dial needles with the same mercerized yarn; seventh feed, plain stitch with cotton as above; eighth feed, tuck on cylinder with cotton as above. Existing machines, if of the right cut, can be refitted for this work at a cost of one-fifth the price of a new machine. If a new cylinder and dial are required, the cost will be one-third that of a new machine. Of course, in most cases a change from 1x1 cams must be made to Swiss cams and new tucking cams and auxiliary parts added. The return to this Swiss-stitch underwear follows a lull of approximately ten years' duration.



Ewing Galloway

View in rayon underwear plant

Among the newest of the machines introduced to the knit-goods trade is a single- or flat-stitch jacquard type for producing lace effects on the eyelet principle. The figures run straight across the fabric without spiraling with the courses, and figures can be eliminated from sequence at will.

Also among the comparatively new machines are two six-feed latch-needle ribbers which automatically knit a 2x2 bottom on a 1x1 body. These make a combination rack and welt edge or provide a racked self edge and draw thread. One of these six-feed ribbers has six two-color yarn stripers with provision for throwing any striper finger out of action without affecting the others. It is also equipped with two-speed drive, which permits high production at such times as automatic changes are not being made. This machine may be equipped with a jacquard attachment having individual-needle control.

Other improvements in knitting machines and auxiliary equipment include versatile adjustments for tension, spring-needle pressing, clearing, backing, etc.; more efficient stop motions; compact driving units for spring-needle ribbers, embodying individual motor and speed reducer and said to be capable of paying for itself within an average of two years; adjustable double gear boxes for spring-needle machines; more efficient bearings, adjustable for wear; and greater general compactness.

Advise Improved Merchandising for

Upholstery Industry of Philadelphia

◆ *Seven months ago, following a strike, the manufacturers and unions identified with the upholstery industry of Philadelphia asked the Industrial Research Department of Wharton School of Finance and Commerce, University of Pennsylvania, to make a complete study of all the facts of the industry in order that they might have a basis for working out a constructive program. A final report has just been completed, and the accompanying article summarizes the recommendations made. Incidentally, the report points out that the two sides, manufacturers and unions, have approached their problem in a unique way by asking that all possible facts which might help be laid before them by an impartial agency.*

COOPERATIVE effort in the establishment of sound labor policies, production efficiencies to effect savings, and a revamping of designing and selling policies, are recommended to the Philadelphia upholstery industry in the report submitted by the Industrial Research Department, Wharton School of Finance and Commerce, University of Pennsylvania.

The main problem faced by that industry is summarized as follows:

The central problem before both the manufacturers and the unions, as we see it, is *how to get more work under acceptable standards.* To that end most of the thinking in all industry today is addressed; but in the upholstery industry in Philadelphia it is *the* problem both in good times and in bad. And with that object in mind our major suggestions in this statement are presented.

The trends in the industry are clear. The volume of business for the trade as a whole has steadily diminished in the years covered by the survey. Even before the depression the average number of workers on the pay-rolls had declined. By 1929 the number of weavers employed had fallen off to less than 70% of the number in 1925. The earnings of workers still employed have shrunk because of irregular employment.

As compared with outside upholstery goods centers, Philadelphia is the only market which is primarily a short-order and specialty or novelty goods market. In these two classes of goods, its differential advantages as a center with a surplus of equipment in a variety of ties, expert designing, high-grade weaving skill, and nearness to the market, retain the business. But the trend is toward shorter and shorter orders with more immediate delivery requests. This demoralizes the entire production program of the mills and makes the earnings of workers highly irregular and uncertain.

It occurs to us that the industry will probably have to separate its policies for dealing with what seem to be two types of business—one for the short-order and specialty or novelty type of work, and another for the longer order and low-priced goods, or what may be called "volume" business. In the first type, price is less important than quality of designing and workmanship. In the second type, price competition is severe. This business can be secured only on a price basis at the present time, and the differential advantages are now in favor of the outside markets as against Philadelphia. As far as such things can be measured we have estimated that this differential, in terms of Philadelphia manufacturing cost, averages about 20%. The differential is at present chiefly an advantage in labor costs, as shown in other sections of this report.

The problem before the industry, therefore, is to develop a program which will pick up every available saving in production and selling costs, in order to narrow this differential. Everyone in the trade admits that the entire spread need not be met, but a narrowing of the gap on certain classes of fabrics should give more regular employment to the workers now in the industry; and such an increase in the volume of work would automatically reduce costs of operation over a period of time. With longer orders, other production economies could be effected.

In other words, the trade needs to advance the prices and rates of wages and margins on the classes of goods in which it has a differential advantage as a market, and to lower costs, prices, and margins on the "volume" business in which it has a disadvantage. It is possible that in the long run, new types of selling and production policies must be developed for the two types of business. All that can be said at present is that it seems necessary for the Philadelphia trade to organize to retain and develop "quality" business, and to offer real competition on "volume" business so as to increase employment and to lower costs.

The details of any collective agreement between the manufacturers and the unions, or of any production or selling program by the manufacturers, would have to be worked out carefully by those who have a technical knowledge of the problems of the trade and its history. We believe, however, that certain suggestions may be helpful in the discussion of these programs. We list our suggestions under the headings of labor policies, production policies, and selling or marketing policies.

LABOR POLICIES

1. We recommend that the unions and the manufacturers cooperate to reduce labor costs and increase productivity in a program to book more volume business.

More specificially we suggest that:

a. There be returned to the weavers part or all of the 14% cut on short runs and that they adopt the two-loom system on the longer runs on shaft and Jacquard looms wherever the character of the fabric permits.

b. The loom-fixers' rule should be made more flexible. When the looms operated in a section fall below a certain number (to be jointly agreed upon) the management would have the privilege of assigning a fixer to two or more sections provided the total number running in both or all of them does not exceed a certain maximum (to be jointly agreed upon). In case it is necessary to combine sections, the work should be rotated among those fixers on the payroll of each mill.

c. Other occupations should devise ways and means of contributing a proportionate share to the program for reducing labor costs.

d. We recommend that all executive and office salaries which have not been reduced 14% from 1930 levels should be so reduced.

2. If the unions cooperate with the manufacturers in a program to reduce labor costs in an effort to get more

volume business, the managements should, in turn, agree to move no looms or other equipment out of the city, at least for a definite period, and should devise ways and means of giving Philadelphia workers a fair share of orders received by Philadelphia mills.

3. In order to insure that no opportunity to secure volume work be lost, we suggest that emergency powers could well be granted to the negotiating committees of all occupations. These powers might enable the committees to deal with the problems arising in the booking of very large orders (perhaps 100 yd. and over), such as the order recently booked in shaft work in one mill in the city.

4. We believe that, in order to provide better against insecurity in the lives of the workers, sums should be set aside currently amounting to at least 2% of the pay-roll—workers contributing 1% of the weekly pay-roll and manufacturers another 1%. These sums would accumulate as a fund out of which, in time, unemployment reserve funds, old-age pension funds, or dismissal wages might be paid. For the present, no benefits could be paid from such reserve funds, and they must be thought of as long-run efforts to deal with the problems of unemployment and retirement.

5. We recommend that there be a better definition of the conditions to which the weavers' piece-work wage rates apply. The weavers' "price list" is based upon average conditions in the trade and is an inducement to the manufacturers not to improve the operating conditions of their shops. Moreover, there is no clear-cut basis upon which the time "allowances" provided for in the present trade agreement can be settled uniformly. This results in unfairness to both workers and mills. Since a system which creates bad housekeeping is injurious to the piece workers, and, in the long run, to the entire Philadelphia trade, it is suggested that the unions and the employers negotiate a "price list," which will not only state the age of harness, size of order, and strength of warp and filling for which the piece rates are set, but will also remove certain inequalities in the present rates. This might be undertaken by the joint technical committee suggested before.

6. We recommend that the principle of equal division of work within shops be adopted in all occupations. For weavers we suggest that some adaptation of the principle which rotates work on all looms in the mill is the most equitable arrangement.

7. It is recommended that the unions and the manufacturers give special study to improving the procedure and machinery for collective bargaining. Few of the above recommendations (which involve joint negotiation) can be effectively applied unless the collective bargaining machinery itself is further strengthened and developed.

PRODUCTION POLICIES

In addition to the economies in labor costs already suggested, we recommend the following steps, looking toward further savings in production:

1. A concerted effort to reduce waste in yarns.
2. Replacement of all old harnesses (over five years of age, for example).
3. Inspection at the start of the order by the boss weaver or loom-fixer.
4. Keeping of more records on shop equipment and performance.
5. Experimentation with increased machine speeds.
6. Testing of yarns.
7. Experimentation with improved machine equipment in all operations.

DESIGNING AND SELLING POLICIES

Survival of the Philadelphia industry will rest, first, on its designing and merchandising and, second, on its labor skill. We suggest that every device within reason that can genuinely improve the quality of the designing and promote better selling is a sound investment for Philadelphia's specialty fabric business. If the labor adjustments above recommended are made by the unions in the interests of lower cost and more complete employment, then a special obligation rests on the industry to adopt the most aggressive kind of intensive selling effort to get business. In the past the fact that a fabric was made in Philadelphia was, in itself, a potent sales argument; today it is often said that in respect to certain types of business "Philadelphia manufacture" because of higher cost, frequently constitutes a sales resistance to be overcome. Such obstacles can only be met by positive action. No negative policy, based upon the memory of past successes, will be adequate. A genuine promotion campaign should be considered.

There are certain special problems in selling which confront a business. Included in these are duplication of selling expense through the maintenance of separate display rooms and traveling salesmen, the number of small orders, the diversity of patterns offered, the copying of designs, and cut-throat price competition.

The marketing problem of Philadelphia mills centers on keeping the specialty business making the short-order business profitable, and at the same time increasing the long-order business to reduce costs of production and to increase employment. In order to make the short-order business profitable it is suggested that the industry might well charge a higher differential for small orders than is now the practice.

We believe it may be possible to effect some saving by dropping more quickly from the selling list those designs which do not "take" and pushing more vigorously those which do. Patterns are eliminated both by choices of customers, and by decisions of the mills that they are unprofitable to continue. It is suggested that all mills might well profit from a vigorous watch over the slow-selling patterns in order to drop those which contribute less to the business than it costs to keep them.

Three suggestions have been made for the solution of the important trade problems:

1. *Market analysis through some national agency or association:* Many problems of such an industry as upholstery cannot be approached locally. There is an opportunity for all manufacturers from all parts of the country to join through the agency of a national association or a common institute in the kind of market analysis which would throw light upon market factors and trends of interest to the entire domestic industry. Certainly the experimental spirit in the single design rooms—important though that is—is not enough. Both the designer and the mill must know what the market is buying and what it is likely to buy. This requires a type of market analysis which would apprise the designer of changes in living habits and customs, and of the "style" cycle; and which would warn the mill of the approaching peak of a design or fabric's popularity. It might be possible for the industry itself to have a considerable influence in controlling and promoting styles. At any rate, a designer, to be successful in merchandising art, must keep pace with the times, and perhaps live ahead of the times. The industry as a whole should supply him with the necessary data.

2. *A stronger manufacturers' association in Philadelphia:* We are conscious of the difficulties in the way of the formation of a national association. Whether that is practicable or not, there are advantages to be derived by the development of a stronger, and more inclusive, manufacturers' association of the mills in Philadelphia. Such an association might be successful in diminishing the copying of designs if bonds were posted which would be forfeited as a penalty for duplicating, even unwittingly, designs brought out previously by another member.

3. *Improved cost accounting as an aid to better pricing:* Even if none of the previous suggestions should prove feasible, we strongly recommend that each mill improve its cost accounting in order to provide the basis for sounder pricing. We notice a wide variation among mills in their methods of costing. The common practice is to apply to the weaving labor one overhead rate for the entire mill, instead of using a separate rate for each department. In contrast, a few mills are careful to treat their overhead and designing costs with precision. The improvement of cost accounting methods would yield three significant advantages:

a. It would help to minimize that part of price-cutting which results from the lack of reliable cost information.

b. It would permit closer control of expenses and operating results.

c. If uniform cost accounting were adopted by the several companies, certain cost information could be exchanged with advantage to the trade.

Acetate Crepe Fabrics

Suffer From Excessive Yarn Twist

By J. Eccles

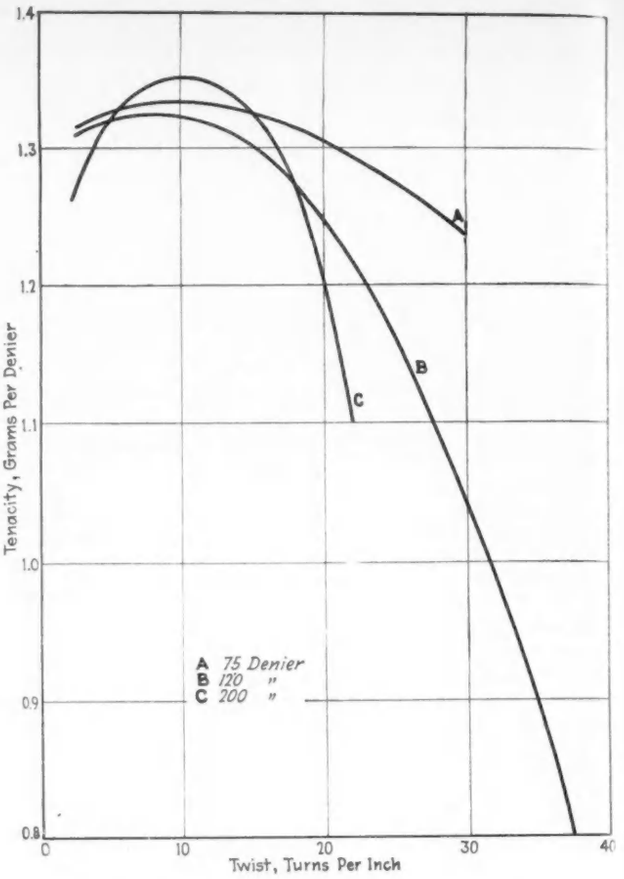


Fig. 1. Showing relation of tenacity to turns per inch

QUESTIONS arising in fabric construction render important a knowledge of the changes in strength which accompany the insertion of twist. Ignorance of the extent to which the strength of acetate yarn may fall when highly twisted has resulted in the production of crepe fabrics which are much weaker in the filling direction than in that of the warp. It is practically impossible to produce an all-rayon crepe fabric equally strong in the warp and filling directions, but this does not justify the enormous differences found in some fabrics. Cloths have appeared on the market with a filling strength only one-quarter of the warp strength.

In the experiments here recorded, acetate yarns with a series of increasing numbers of turns per inch were prepared. The twist was carefully determined in every sample of yarn tested. The values of the tenacity (breaking load divided by denier) plotted in the graphs in Fig. I are averages of numbers of tests showing very good agreement among themselves. The deniers of the yarns chosen for the experiments were 75, 120, and 200. The values of the twists corresponding to the maximum strengths are not well defined, as would be expected. The higher deniers exhibit a rapid decrease in tenacity with increase in twist when the maxima of the curves have been passed. For the higher twists used in crepe filling yarns (about 60 turns per inch in 150 denier, and 70 turns per inch in 100 denier), the tenacities fall to about 0.7 grams per nominal denier, or even less. If the tenacities are calculated by dividing the breaking loads by the deniers after twisting, the results may be as low as 0.5 grams per denier. The high twists in these yarns are accompanied by increases in denier of about 30%.

The main part of this work was restricted to the lower twists, partly because all twisted yarns with the exception of crepe filling are included in the range of twists covered. One object of the work was to show that for many purposes some increase in strength, in addition to other valuable properties, could be obtained by the insertion of a few turns per inch. The cross-sections of "natural" rayon yarns, particularly at the points of contact of warp and filling, are flat ellipses. Their low twist is insufficient to give them round cross-sections like those of yarns composed of the older textile materials. The addition of low twist, however, makes the cross-sections more nearly circular. The ribbon-like cross-sections of the yarns in fabrics containing natural yarns partly account for the lean handle of many rayon fabrics.

Fig. 2 shows the effects of twisting acetate yarns. Curve *A* is that of a natural yarn with 2½ turns per inch. This is the well-known acetate-yarn curve showing the pronounced plasticity when the load exceeds that corresponding to the elastic limit. Curve *B* is that of a yarn with ten turns per inch. The increase in tenacity and extension is noticed at once. But it is also seen that both the elastic limit and the value of Young's modulus are reduced. Young's modulus, or the ratio of stress to strain, in the first part of the curve is proportional to the slope of this initial straight portion. Curves *C* and *D* with 20 and 50 turns per inch respectively show the progressive fall in breaking load, extension, and Young's modulus consequent upon the insertion of twist. Such curves exhibit graphically the difficulties in the production of all acetate crepe fabrics.

It may be pointed out that the numbers of turns per inch in acetate crepe yarns are high in comparison with those in real-silk crepe-twisted yarns. Natural-silk

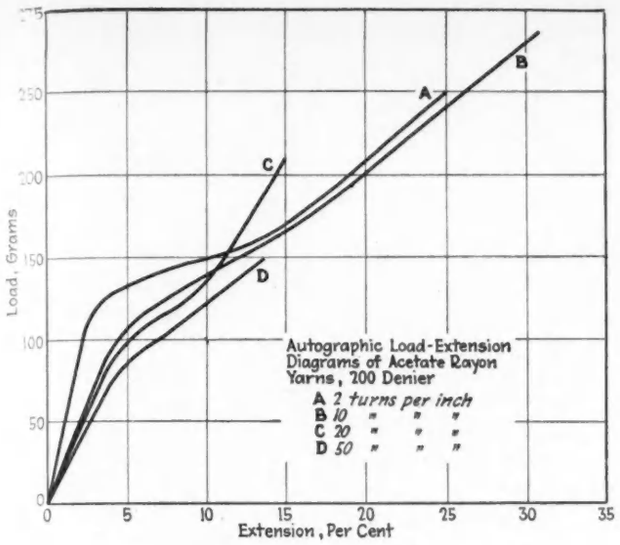

Load, Grams
Extension, Per Cent
Autographic Load-Extension Diagrams of Acetate Rayon Yarns, 200 Denier
A 2 turns per inch
B 10 " " "
C 20 " " "
D 50 " " "

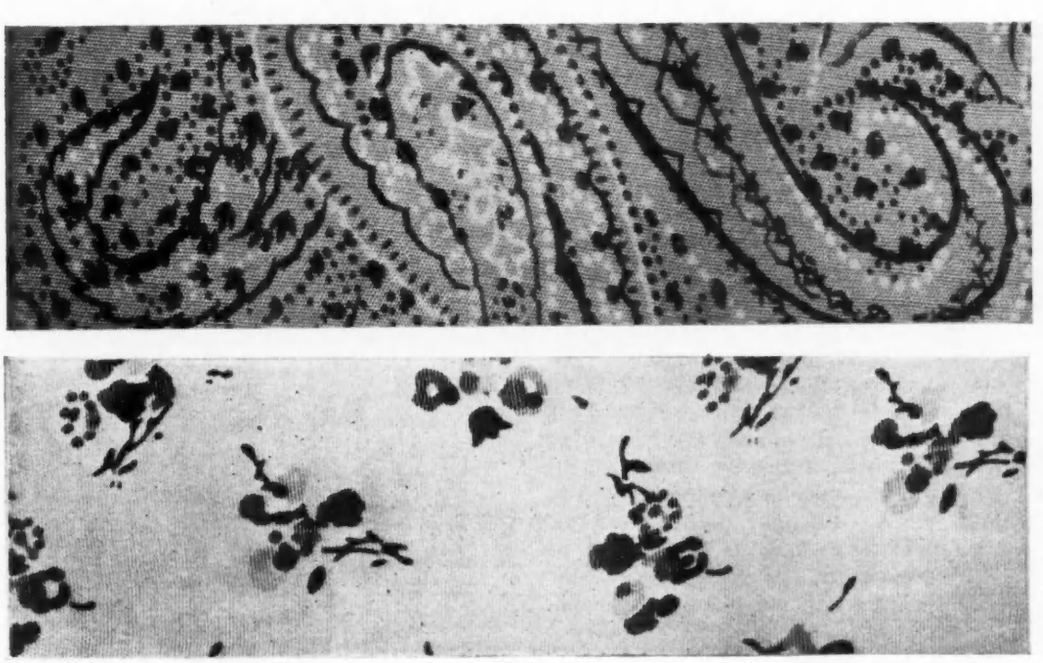
Fig. 2. Showing effect of twist on elasticity of acetate yarns

crepe yarns of 2/13/15 denier have usually about 80 turns per inch. The equivalent twist in 150-denier yarn, according to the approximate rule that equivalent twists are inversely proportional to the diameters, would be about 35 to 40 turns per inch. It is quite likely that if the warps of acetate crepe fabrics were made suitable for filling with this twist, cloths with better crepe effect might be obtained; and the disparity between the strengths of warp and filling would be considerably less than that frequently found. The flat effect on most crepes composed wholly of acetate rayon is due mainly to the inability of the filling to produce sufficient distortion of the warp and filling yarns on wetting. Generally this is not wholly due to the plasticity of the material. It is partly due to warps which are too heavy, too closely packed, and woven under too high a tension.

Natural silk is much less plastic than acetate yarn, as autographic tensile tests readily show. Tests on real-silk crepe yarns show that the tenacity is very little inferior to that of yarn with low twist. The twisting is usually facilitated by softening the silk gum with an emulsion of soap and oil. Dressing or sizing acetate yarns before twisting has been proved to produce so little improvement that it is not justified from the point of view of cost. The size applied does not increase the strength of the yarn or reduce its plasticity.

The reasons for the low tenacity of highly twisted acetate yarns are obscure. If such yarns are carefully untwisted and tested, they are found to possess nearly as high a tenacity as yarn which has never been twisted. This experiment suggests that cellulose acetate offers smaller resistance to shearing forces than to longitudinal tensions, for the pull on a highly twisted yarn has a large component perpendicular to the longitudinal axes of the filaments. The high degree of plasticity fully accounts for the small tendency, as compared with real silk, to untwist and snarl on wetting. As the plasticity is an inherent property of the substance, it is difficult to see how the tendency to recover from torsional strain can be increased. It has been shown, and it is fairly obvious from the principles of elementary mechanics, that the present tendency to use finer filaments in rayon yarn is inadvisable in the case of crepe filling. The small power of cellulose acetate to recover from twisting strain is far less likely to be exhibited in fine than coarse filament.

It may be useful to note the way in which twist influences the strength of staple-fiber yarns. The actual relations between twist and strength vary according to the spinning powers of the materials, and they are naturally very complex. A staple-fiber yarn is far more complicated in construction than one made of a continuous-filament fiber. The latter normally depends for its strength wholly on the tenacity of the individual filaments. In the staple-fiber yarn the friction between the filaments is of the greatest importance. It is by virtue of this friction that a staple-fiber yarn has any strength at all. The extent of the contacts between the filaments is increased by twisting. The strength of the yarn, therefore, continues to increase with twist throughout the greater part of the curve exhibiting the twist-strength relation. When the twist becomes so high that the yarn snarls when its tension is released, the strength may fall off to some extent, but the general shapes of the curve for spun yarns are very different from those for continuous-filament yarns.



Typical rayon flat crepes with printed patterns

Root Problems *Must Be Attacked* in 1932

◆ *The following analysis of the lessons of 1931, and their significance for 1932, is from a recent confidential market letter issued by Scheuer & Co., cloth brokers, New York, and reprinted here through the courtesy of that company. Its significance extends far beyond the confines of the particular group addressed.*—Editor.

NINETEEN hundred and thirty-one will go down in history as the most costly year our industry has ever experienced. Merchandising abuses have become more severe and capital accounts have fairly shrivelled. With few exceptions, machinery has been operating on reduced and irregular schedules, bringing costs up, while prices have fallen steadily. This downward price movement has been uninterrupted. January, February and March were the high points and practically each month thereafter new lows were established.

The finishing industry aggravated this instability by duplicating the gray price movement; finishing quotations fairly melted and closed the year at record lows. As a result, throughout the year constant depreciations were absorbed and inventory write-offs will be severe. More important, accompanying this melting of prices, all operating margins have been whittled and in many instances have passed the vanishing point. The mass of mills, finishers, converters, commission houses and brokers are finding it next to impossible to cover their fixed charges. While our experience this past year was not far different from that of most other industries, we cannot take comfort in this fact. The consumption of our products was relatively higher than was that of any other major industry we know of, therefore our results might have been expected to be relatively better. They were not, because of man-made impediments within the industry, bad organization, uneconomic procedures and methods, and unfortunate and unrealistic thinking in the seats of the mighty.

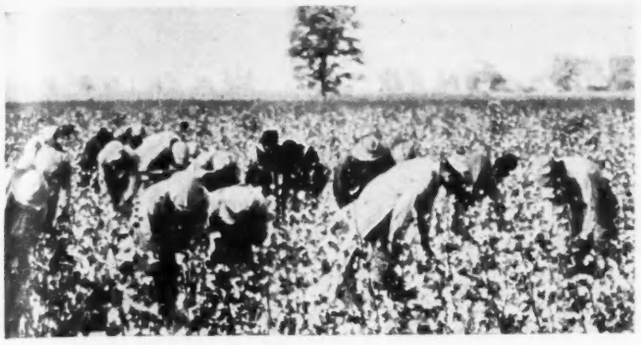
In the year 1932 we must attack some of our root problems, our finishing industry should be reorganized; gray selling methods must be modernized and centralized; mill managements must be consolidated. We must cut through the many antiquated procedures, false economy, duplication of effort and individualism. Among the converters, only those who can forget the past and its glories and who are able and desirous of meeting the future on its own terms can hope to survive. Mere resentment and complaining will not change the condition. Converters must never forget that industry is inherently changeable; it is subject to a constant process of evolution; flexibility therefore is bound to be the keynote of success. . . . .

Owners of businesses, controlling stockholders, administrators in control of many of our enterprises, have with the best of intent mishandled our industry. We do not belittle these men, they are to be admired in many ways but they are not all inclusive, they try to deal with problems which require training and knowledge which is distinctly outside their experience. They freely seek legal or engineering advice when they have need for it but rarely will they delegate matters of high economic involvement to the expert. They negotiate their trade betterment movements themselves, ignoring the skill required to accomplish results. The arts of the diplomat, debater, psychologist and clear economic realist are rare and it is no disparagement to say that few business men are so equipped.

Let us realize that malpractice of industry is damaging. The stake is far greater than the individual interests involved; the vast horde of men and women and their many dependents who are engaged in this industry are vitally involved. They are the backbone of our country's well-being and our jobs cannot be successfully administered, our capital made productive unless we improve their status. These considerations are inextricable, they are bound together. Our industry owes it to itself and to our workers to furnish an administration of the mentally elite. It is enlightened selfishness, it is good citizenry.

Existing price levels are the result of a combination of unfavorable conditions, instability throughout the world, financial chaos, bumper crops, over-competition, over-production (in the common meaning of the term). Granting that most of these unfavorable influences will operate for some time, does this imply perpetually lower prices? No! Because an over-discounted situation stops discounting at some point, perhaps not permanently, but it does stop long enough to catch the swells of trade improvement and changed trade psychology. . . . .

Prevailing economic conditions are unprecedented and uncertainties abound. It is all but impossible to express any soundly based long range views on the textile outlook. It is evident that we will experience difficulties aplenty in 1932 but they will be difficulties which will force betterment all around us. We can see and feel evidences of the changes which must come about this year; we are experiencing a textile revolution. The industry must and will embark on radical departures, we will experience the stimulating influence of creative and unorthodox thinkers. We will vitalize our efforts, we will learn to look at our problems objectively and reorganize to meet the needs of the decade ahead. We will come to realize the tremendous opportunities which are present and which have been present, but which have not been fully appreciated. We have much for which we should be thankful. Our future is promising but we must live up to its obligations.



Net Weight Basis for Cotton Sale

Gaining Impressive Support

By Ralph C. Maultsby

Southern Editor, TEXTILE WORLD

ADOPTION of the net weight basis for handling cotton in the domestic markets has been urged at various times by individual manufacturers and by the American Cotton Manufacturers Association. Last June, because it was then too late to accomplish anything in this direction before the 1931 crop began to move, leading manufacturers offered to pay for 7 lb. additional cotton on each bale wrapped in a 100% cotton bagging. This offer, which continues until July 31, 1932, was made as a means for increasing the consumption of low grades of cotton through the additional outlet for cotton bagging.

Cason J. Callaway, one of the sponsors of this plan to encourage the use of cotton bagging, in a letter to the membership of the American Cotton Manufacturers Association, pointed out that "the best way to handle this situation from the producers' viewpoint would be for cotton to be sold on a net weight basis," and that "any other plan, such as now under consideration, is a makeshift" proposition. It is estimated that the quantity of cotton wrapped in 100% cotton bagging this year, while perhaps running into several thousand bales, has been nevertheless only a small fraction of the total crop.

Further thought on this situation has resulted from a recent announcement that the International Federation of Master Spinners, at Manchester, England, had adopted the following resolution: "A satisfactory cotton baling material having now been produced, this committee strongly appeals to the Governments of the United States and Egypt to urge the adoption of this material for cotton baling in the future." This action of the British manufacturers was taken after samples of cotton bagging, sent them by the Cotton-Textile Institute, had been carefully examined and tested. Laboratory tests of several different cotton and jute baggings were made by the Bureau of Agricultural Economics, U. S. Department of Agriculture, and bales wrapped in these baggings were handled in every way like commercial bales and sent to Bremen with a commercial shipment two or three years ago. General conclusions reached, after cotton bagging had been given a fair test of performance under normal commercial conditions, were that the lightest weight cotton bagging tested was superior to 2-lb. jute bagging and the burlap used on Egyptian bales; cotton bagging is ordinarily more expensive than jute, but its use would effect an annual saving of nearly $4,000,000 through lower transportation charges, insurance rates, and other costs; and the use of cotton bagging would afford an outlet for 120,000 to 200,000 bales of low-grade cotton each year, which would favorably affect cotton prices in general.*

One school of thought in the cotton trade believes that an act of Congress will be necessary to bring about general adoption of the net weight basis for buying and selling the staple. Indications are that representatives from cotton manufacturing States will be asked to devote some attention to this problem during the present Congressional session.

A Standard Tare Law

In a statement to TEXTILE WORLD, H. G. Safford, vice-president and sales manager of the American Cotton Cooperative Association, suggested that Congress pass a standard tare law, to become effective within two years, this lapse of time permitting all interests to adjust themselves to the new procedure. This standard tare law would contain the following features:

That tare for jute bagging should be fixed at a definite number of pounds per bale.

That tare for burlap bagging should be fixed at a definite number of pounds per bale.

That tare for cotton bagging should be fixed at a definite number of pounds per bale.

That actual deduction for tare should be made on each invoice, giving a net weight basis for purchase and sale.

In this proposal, tare is standardized for each variety of bagging for the purpose of avoiding unnecessary taring expense, as it will allow any buyer to check with his eyes the number of pounds of tare. This feature, it is claimed, will avoid the necessity for stripping the bales individually for weighing the tare.

Another method suggested for adopting the net weight basis in domestic markets is through proposed rulings of the New York and New Orleans cotton exchanges requiring that all cotton delivered on contract be priced on a net weight basis. It is pointed out that Europe already buys cotton on this basis, arriving at the actual tare by stripping a certain number of bales from each lot and weighing the bagging and ties. Transactions between the farmer and the first buyer are not so simple, it is pointed out, but if ginners were required to mark the weight of tare on each cotton bale, most of the difficulty at this point would be eliminated.

Careful analysis of available data makes it appear that importance of the new outlet *(Continued on page 34)*

*"Cotton Production and Distribution in the Gulf Southwest"—U. S. Dept. of Commerce (1931).

Throwster's Clearance

Best Determined by Tests of Raw and Thrown Silk

◆ *It is common practice to check throwster's clearance by the percentage gain in weight of thrown silk over the raw-silk weight. The accompanying article, which is reprinted from a pamphlet issued by the U. S. Testing Co., Inc., discloses the errors in this method, and advocates a check based on tests of raw and thrown silk.*

IS IT correct to check the commission throwster's clearance report by the percentage gain in weight of the thrown silk invoice weight over the raw invoice weight? The answer to this question is "No." Nevertheless the erroneous use of this percentage is quite common. Recently, a knitter was convinced that his throwster had mistakenly included someone else's silk with his. He based his belief on the fact that his thrown yarn showed almost a 10% increase in weight. So convinced was he that he was not dissuaded until a correct clearance based on test reports showed that he not only did not receive anyone else's silk, but that the throwster had made excessive waste.

A Specimen Report Analyzed

The following specimen example, which is typical rather than exceptional, shows a comparison between the erroneous method of using the percentage of gain and the correct method based on raw- and thrown-silk test results. The lot in question was invoiced at 1312.95 lb. in the raw and 1437.10 lb. in the thrown, an increase of 124.15 lb., or 9.46%.

The knitter had expected the silk to be soaked for a 25% boil-off; and therefore expected about a 6.6% increase in weight. When the increase in weight proved to be 9.46%, he felt satisfied that the agreed allowable waste of 2.50% had not been exceeded, but was confident, as mentioned before, that someone else's silk had been mixed with his. The invoiced weights and the tests made on the raw silk before shipping to the throwster and the tests made on the thrown silk deliveries showed the following facts:

Weight of raw silk as invoiced by importer	1,312.95 lb.
Weight of thrown silk as invoiced by throwster	1,437.10 lb.
Conditioned weight of 4 bales of raw silk tested	523.36 lb.
Invoiced weight of 4 bales of raw silk tested	533.62 lb.
Boil-off of raw silk by test	18.03%
Conditioned fiber weight of the tested cases of thrown silk	197.60 lb.
Invoiced weight of tested cases of thrown silk	285.53 lb.

The correct calculation, which follows, shows an excess waste of 43.06 lb. or 3.28%.

Raw

$$\frac{1{,}312.95 \times 523.36}{533.62} = 1{,}287.71 \text{ lb. conditioned weight of lot of raw silk}$$

Less 18.03% 232.17 Boil-off

1,055.54 lb. conditioned fiber weight of raw silk.

Thrown

$$\frac{1{,}437.10 \times 197.60}{285.53} = 994.54 \text{ lb. conditioned fiber weight of thrown silk.}$$

Waste

1,055.54 lb. conditioned fiber weight of raw wilk.
994.54 lb. conditioned fiber weight of thrown silk.

61.00 lb. waste

$$\frac{61.00 \times 100}{1{,}055.54} = 5.78\% \text{ Waste}$$

Clearance

Supposing the waste allowance agreed upon by the two parties to be 2½%.

5.78% actual waste
2.50% agreed waste

3.28% excess waste

3.28% of 1312.95 lb. (weight invoiced to throwster) equals 43.06 lb. excess waste; or:

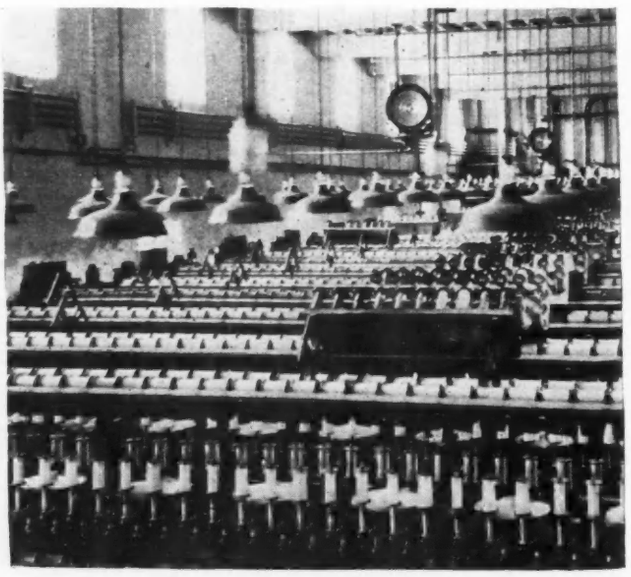
5.78% of 1312.95 equals 75.88 lb. actual waste
2.50% of 1312.95 equals 32.82 lb. agreed waste

43.06 lb. excess waste

The knitter then made claim for this shortage in weight, based on the price of the thrown silk, and was promptly allowed by the throwster.

Cost of raw silk	$2.50 per lb.	43.00 lb. shortage	
Cost of throwing	+1.00	+3.50	
Cost of thrown silk	$3.50 per lb.	$150.50	claim

Since this is a typical and not an exceptional example, it emphasizes the necessity for testing both raw- and thrown-silk deliveries to determine the correct clearance.



Double-deck spinners in silk throwing plant

In looping and other departments care should be taken not to mix the different lots of hosiery

An Appeal for Care in Hosiery Mill Operation

By W. H. Hand

WITH competition so keen and profits so small, cutting down manufacturing costs is one of the main problems in hosiery mills. If every operator in the mill wastes a little here and there every day, it amounts to a large figure in dollars and cents in a year's time. The waste in hosiery mills should and must be cut to a minimum, if the mill officials are to show a profit.

When a worker first comes on the job, it is the business of the superintendent to instruct him in his duties and to caution him regarding waste. In these days of efficiency, an employee who disregards instructions, who thinks more about his pay ticket than he does about doing his work the best that he knows how, who is careless and wasteful, is a dead expense to the business and should be discharged. Therefore, the first hard and fast rule for cutting costs is to have the superintendent in each department instruct his help properly, showing them the proper way to do their work and obtain the best results at the least possible cost and with the least possible waste.

Let us start in the knitting room where the goods are in their first stages of manufacture. Take a good look around. Is there any yarn left on the empty cones that the knitters have removed from the machines? Is there a litter of yarn cones scattered all around the knitting room? Are some of the stockings lying on the floor where splinters are likely to pull threads in them, and where they may pick up oil and grease?

Often the knitter is in a hurry, and he will change to a full cone of yarn before all the yarn is off the old one. Then too, he doesn't keep the stockings picked out of the cans often enough. Sometimes there are several stockings in the can before he starts around again—then he goes in a hurry, not examining his goods as he should. A machine may be making seconds for some time before he notices it. Make each knitter stay on the job, and provide a place on each machine to keep the seconds made each day. A careful check can be made, and a large percentage of the unnecessary seconds will be cut down. When the knitter finishes a lot, it should be put in a bag, ticketed, and the lot sent on down to the inspectors, back-seamers, loopers, and on down the line, making sure that the lot is retained as a unit.

The boarders should be charged for all reboards plus the cost of picking them out. They should also be cautioned to be very careful while filling up their troughs and not to scatter stockings all over the floor. If goods in the gray must be kept in boxes, be sure that, if the sides of the boxes are not perfectly smooth, they are lined with paper.

What of the warehouse? Is everything in its place? Are the boxes scattered, part of one kind and color in one place, and part in another? If everything is in its regular place, a great deal of time and trouble can be saved. When the boxes are carried from the warehouse, are one or two lost along the way? Are they left in places where people in passing stumble on them and smash them?

Hundreds of dollars and hours of precious time are being wasted daily in mills because of carelessness and thoughtlessness. The supervisors and employees can and will cooperate if they are only told and shown how. Jobs are scarce, business is slow, and every employee should be willing to do all in his power to help keep the business going and to make it pay.

Microanalysis of Fibers

By Edward R. Schwarz
S.B., A.T.I.

THE importance of the microscope in connection with the study of textile fibers cannot be overestimated. Whatever their source or nature, the fibers form the basis upon which the entire industry rests. They are its raw materials, and until an industry thoroughly understands its raw materials no decisive progress can be made. Chemistry has told us much regarding textiles, but it works with the materials of which the fibers are composed.

While it is of interest and value to know that silica, calcium, manganese, carbon, iron, etc., in certain combinations and quantities have been used in a building, it is also of interest to know how the bricks are laid, what are the physical properties of the wood and steel beams, and how the members of the structure are assembled. The former items of information can be furnished by the chemist as well for cotton, hemp, and silk, as for concrete, wood, and steel; but items of the latter sort are the result of physical tests.

Hence, while predictions may be made as to the behavior of textile fibers, given certain combinations of chemical elements in their make-up, it remains for physical tests to give quantitative analyses of other fiber properties. Foremost among the equipment of the textile technologist, who is active in this field, must be suitable microscopes and accessory apparatus.

Fiber Structure

Use of the microscope as an aid to other means of investigation will not only dispel the present haziness in regard to the development of new and improved synthetic fibers, but will, in doing so, furnish valuable data as to the structure of the natural fibers of commerce. Only since the use of the microscope has it been made evident that the structure of so common a fiber as cotton is immensely complicated. Such things as the number and arrangement of convolutions per unit length of the cotton fiber are seen under the microscope to be definitely predetermined as the fiber grows ("Studies of Quality in Cotton," by Balls, MacMillan, London, 1928). Thus, the importance of proper control of growth is obvious. The botanist—again with his microscope—is working untiringly to get at causes and their necessary consequences so that the cotton grower and manufacturer alike may obtain the qualities in the fiber which they desire. Until much more data have been accumulated through research with optical apparatus, and until the industry fully awakes to the necessity for correctly correlating this information with the spinning of the fiber, the textile mill will work at a disadvantage.

Nor is such research confined to cotton alone. Requirement for service must be met by yarns of many other fibers. Such questions as how crimp is developed in wool; how kempy fibers are formed; how pigment originates and is distributed; why fibrils of silk are released from the filament; how the mechanical structure of jute differs from that of hemp and flax; why fibers are doubly refracting in varying degree; how moisture is held mechanically in the fiber structure; and the nature and mechanism of swelling, shrinking, felting, twisting; as well as many others, must eventually be answered. To answer them the worker must be able to see just as much of the fine details of structure as can be made apparent to him through the microscope. He must be able to make precise measurements with micrometric devices. The techniques developed for the preparation of cross-sections by hand and by the use of automatic microtomes must have become almost a second nature.

Cross-Sections Valuable

With the simplified techniques for rapid sectioning worked out by Viviani and by the author, means are at once available for determining either the average fineness of fiber or of the variation in radial dimensions. It has been stated by Dr. S. G. Barker ("Measurable Attributes of the Wool Fiber,"—*Textile Manufacturer*, Aug. 15, 1929) as a result of preliminary investigations, that it is very probable that the more nearly circular in cross-section, and the smaller the variation in diameter, the better wool and mohair will spin. Measurements made on longitudinal mounts, where separate fibers must be treated throughout their length at various places, are not easy to make; require very carefully planned and prepared mounts; and, in the end, may not give a true picture of the conditions as they exist.

The difficulties inherent to the preparation of a representative sample have been discussed by many investigators. When fibers are selected from a bundle or lock, there is apt to be an unconscious tendency to over-sample

A clear understanding of the properties of fibers—the basic raw materials of the textile industry—can be gained only with the aid of the microscope. In the accompanying article, the author outlines the manner in which microanalytical methods can be utilized in studying the natural and synthetic fibers. Due to the unusual demand for issues of TEXTILE WORLD containing Professor Schwarz's earlier articles, arrangements have been made for publishing this remarkable series in book form after its run in TEXTILE WORLD has been completed.

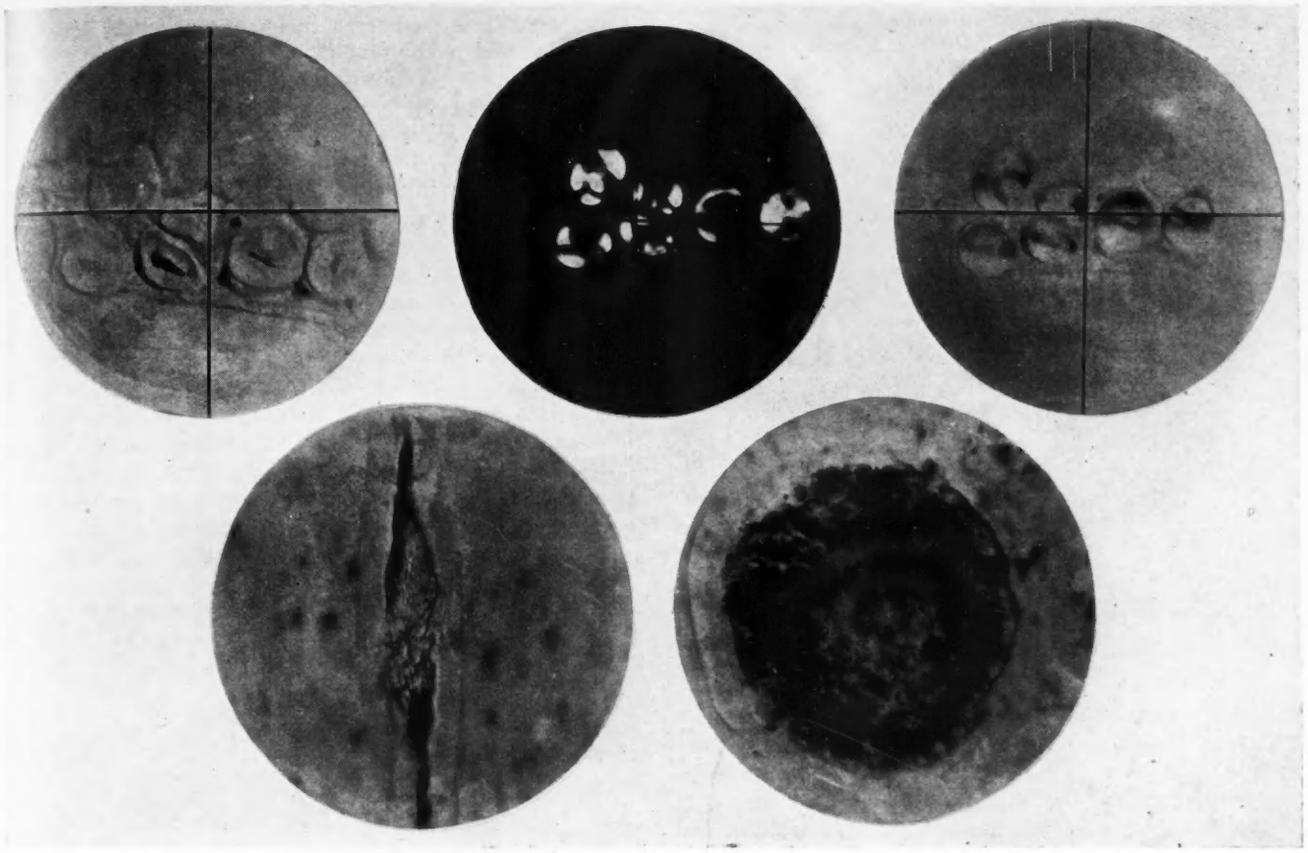


Fig. 1. (3 upper views), Mercerized cotton cross section—(left to right) ordinary light; plane polarized light; elliptically polarized light. Note the color markings in the last two views which are absent in first.

Fig. 2. (2 lower views), Photomicrographs taken with an oil-immersion objective—left, cotton fiber showing irregularities of internal structure; right, cross-section of camel's hair to show pigmentation.

certain qualities. A long, stiff fiber will be more easily grasped and withdrawn from the batch than will a short, flexible one. Conscious selection defeats the purpose when statistical analyses are to be made. Such studies are almost always essential in work with fibers, since the comparatively small number studied must be assumed to give a fair picture of conditions throughout the entire lot. Perfectly random sampling is, therefore, a necessity.

One of the simplest ways to mount fibers for a measurement of diameters is fortunately one of the best methods for random sampling. The group of fibers for a given mount is drawn through cork or the Schwarz metal sectioning plate, and two measurements at as many different points in the fiber length can be made on each fiber. The location of these points as to base, mid-portion, or tip section of the fiber can be taken as desired. It goes without saying that a large number of mounts must be studied—each mount being made up of a bundle of fiber selected at random.

The cross-sections can be studied with ease; and the area, when found, may be divided by the area of the circumscribing circle according to A. Herzog ("Die Mikroskopische Untersuchung der Seide u. der Kunstseide," Springer, Berlin, 1924); or as suggested by H. Schloemer ("Die Kunstseide," Oct., 1930), may be divided by the area of a circle of equal circumference. There is some advantage in the latter scheme. Whatever the method employed, the resulting "disk coefficient" is of considerable value, and may be correlated with grade and quality studies and with spinning properties. In the case of rayons the author (TEXTILE WORLD, Sept. 28, 1929) has pointed out the use of the "disk coefficient" as relating to covering power, luster, etc. Here the factor determined from the area is shown to be inversely proportional to the ratio of the average long to the average short diameter.

Use of the mechanical stage for the measurement of fiber length has already been described ("Textile Micrometry," TEXTILE WORLD, Oct. 26, 1929). This method applies only to fibers falling within a small range of staple or of cut length. This is evident when the limitations imposed by the design of the stage are considered.

Measurement of Fiber Properties

The usual micrometric accessories are available for the measurement of other fiber properties, such as cell-wall thickness, ultimate cell length and diameter, angle of fibrillae or of convolutions, number of scales, crimps, twists, or slip-planes per unit length, etc.

Of fundamental importance is the micro-study of ultimate fiber structure. In this connection, no single method of attack is so productive of valuable results as the investigation of properly prepared cross-sections. All of the methods already outlined ("Preparing Cross-Sections of Textiles," TEXTILE WORLD, Jan. 18 and Feb. 15, 1930) will have to be employed individually or collectively for this purpose, and the use of stains will aid considerably in this work.

A field which promises to be of very great use is the employment of swelling methods for fiber study. J. M. Preston (*Textile Manufacturer*, July, 1930) outlines the points of unique interest. By the use of proper reagents,

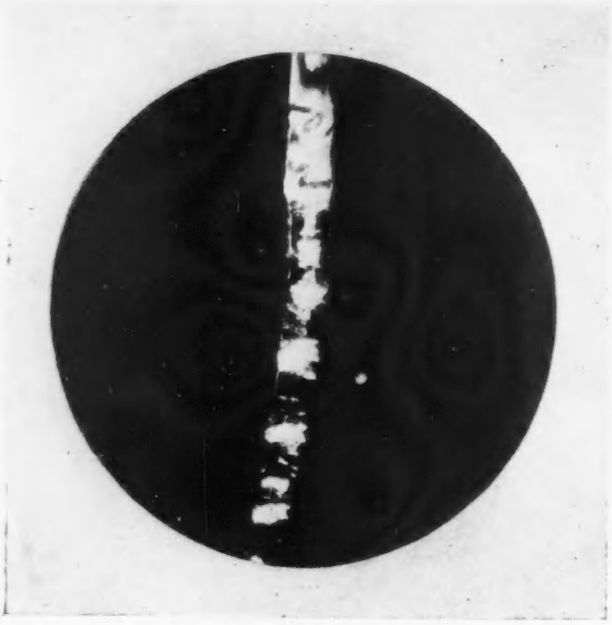


Fig. 3. Flax fiber by dark-ground illumination—compare with Fig. 4

structural features of the fiber, which would normally be too small and too tightly packed to be resolved by the microscope, or of too nearly the same composition to be defined clearly by contrast, can be increased in size sufficiently to be examined easily, and at the same time so separated from each other as to make evident their structural characteristics. When different constituents are present, they swell to different degrees in different directions, and can thus be distinguished with comparative ease. Further, conditions of strain existing in the fiber in its untreated state, are relieved by the action of the reagent; and whereas their presence may not have been apparent in the first place, it becomes so as a result of the change. Quantitative measurements are sometimes possible, but in general, the method is better suited to qualitative work.

Table I. Examples of adaptation of microchemical methods to textile research

Date	Purpose	Swelling Agent	Fiber	Author
1865	Structure	NH_4OH +CuO	Cotton	O'Neill
1869	Structure	KOH	Silk	Verson
1880	Structure	$KMnO_4$	Silk	Wardle
1881	Oxycellulose	NH_4OH +CuO	Cotton	Pennetier
1894	Structure	NH_4OH	Wool	Nathasius
1894	Structure	NaOH	Wool	Lobner
1894	Chem. constitution	Acid and alkali	Wool	Hirst
1904	Structure	HCl +pressure	Silk	Levrat-Conte
1911	Bacterial attack	NH_4OH +CuO	Cotton	Carbone
1919	Structure	Viscose reaction	Cotton	Balls
1920	Bacterial attack	Viscose reaction	Cotton	Fleming-Thaysen
1922	Structure	$Ca(CNS)_2$	Cotton	Balls-Hancock
1922	Structure	NaOH +pressure	Cotton	Balls-Hancock
1922	Structure	H_2SO_4 +pressure	Cotton	Balls-Hancock
1922	Structure	$CaCl_2$ +pressure	Bast fibers and cotton	Nodder
1922	Damage	NaOH	Cotton	Willows
1924	Structure and damage	NaOH +pressure	Flax	Searle
1924	Structure and damage	Viscose reaction	Flax	Searle
1924	Damage	NaOH	Flax	Searle
1929	Structure	NH_4OH +CuO (Constant copper content)	Bast fibers	Saskostschikoff

Microchemical Methods

This technique was applied to textiles as early as 1865 in work on cotton fiber, and demonstrated clearly the existance of an outer cuticle layer which was resistant to the action of the swelling agent. It was amplified to include the use of Congo Red by Bright and others for the distinctive coloration of the inner layers of the fiber (*Journal of the Textile Institute,* 1926, T 394).

The material of Table I is adapted from one by Preston (Burns, *Journal of the Textile Institute,* 1925, T 185) and is of more than passing interest as showing the early adaption of microchemical methods to textile research. Some of this work is classic.

Structure is also made evident by the use of such aids as polarized light. It has been pointed out by Sakastschikoff (*Melliand's Textilberichte,* 1928, p. 930) that the crosswise markings in certain bast fibers, wrongly called "joints" in much of the literature, have a unique appearance in polarized light. This fact the writer has noted many times, and there can be no doubt but that they are largely an optical phenomena, due of course to some change in the structure—usually as a result of handling or processing. It has been suggested that the effect may be due to slip-planes. Whatever the cause, it will be definitely decided upon in the light of microscopic or of microchemical research.

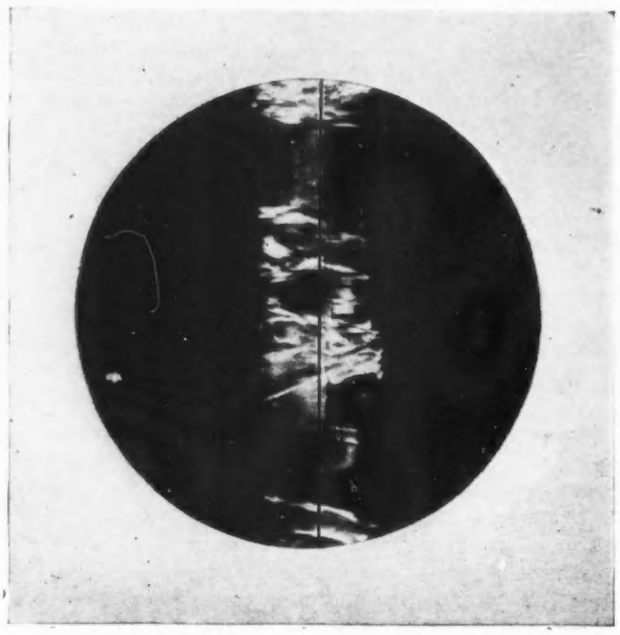


Fig. 4. Ramie fiber by polarized light, Nicols crossed, parallel position—compare with Fig. 3

Identification of the textile fibers with absolute certainty is a goal not yet achieved. Much progress is being shown, however, and if anything is clear, it is that there is no royal road to success in this direction. More and more it becomes apparent to the writer that no one method can be expected to serve with complete success for all fibers. Differentiation on the basis of selective coloration can be satisfactorily employed for certain cases.

Animal fibers can be distinguished from those of vegetable origin, and cellulose acetate from the other types of synthetic fibers. The method will not serve, however, to distinguish wool from mohair, or either fiber from alpaca. It is of practically no value for distinguishing bast fibers from each other. On the other hand, simple micro-examination serves to differentiate wool from cotton, wool from mohair (as well as it can be done at present), manila hemp from flax or jute, and ramie from other bast fibers. There is no absolute certainty of separation of camel's hair and alpaca in the case of certain grades of each fiber, or of the complete differentation of, say, Italian hemp from certain of the other varieties.

Fiber Identification

A considerable part of the literature on textile fibers has been devoted to fiber identification (Matthews, "The Textile Fibers," and bibliography accompanying this volume) and many tables of diameters, staple, ultimate cell dimensions, etc., have been published. With the exception of a very few authors—outstanding among whom is Dr. Alois Herzog, of Dresden—most of the writers have quoted figures from sources largely outside of their own experience. Study of these data in comparison makes it quite plain that, in very many cases, the results can be traced directly or indirectly to Höhnel. Some writers give him credit; others quote men who, in turn, credit him; and still others omit any acknowledgement of source. Evidently much remains to be done in the way of direct measurements on textile fibers by workers in this country. This is the more evident when the diversity of values for the same fiber is considered.

As a means of identification, measurements of fiber dimensions prove unsatisfactory because of the tremendous variation from one fiber to the next in a sample; and hence, the very great number of measurements which must be made before a reliable mean can be determined. Obviously the precision of the results for each of two types of fiber must be great enough to warrant comparison of figures which are often closely similar. While the microscopist can make the needed measurements, they are in general nearly valueless for identification purposes.

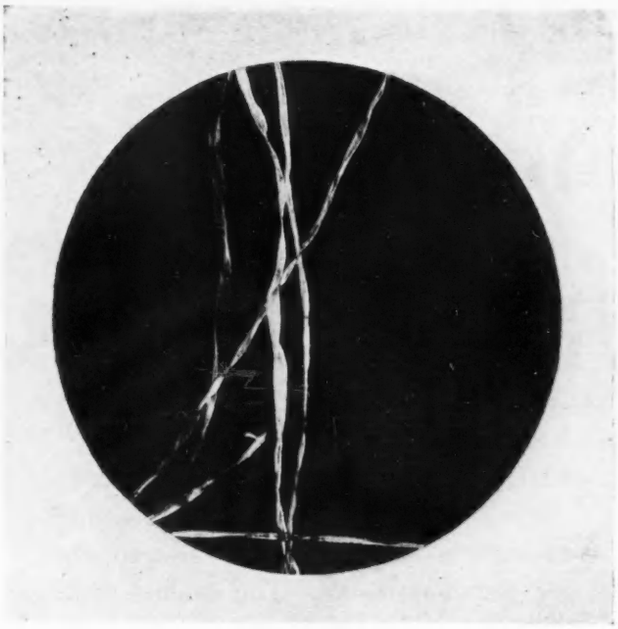


Fig. 6. Cotton fibers by polarized light, Nicols crossed —Note that the fiber is bright in all orientations

A particularly good example of the application of statistical methods to the treatment of fiber data—both microscopical and physical—is to be found in a paper by Spencer, Hardy,, and Brandon (*Tech. Bull. No. 85,* Oct. 1928, U. S. Dept. of Agriculture) "Factors that Influence Wool Production with Range Rambouillet Sheep." Special attention is directed to the table of correlation coefficients. As indicated here, the comparison or correlation of microscopic observations with similar or with other physical or chemical determinations, can only be made safely on the basis of a large number of tests, statistically treated.

Other factors, such as density, indices of double refraction, rates of swelling, cross-sectional appearance, surface characteristics, microchemical reactions, as well as the interference colors produced in the fiber by polarized light, must all be considered. And yet, these items are seldom mentioned except superficially in connection with techniques intended to differentiate fibers.

The writer believes that a pressing need is the construction of a systematic tabulation of the physical and chemical characteristics of fibers. From this it should be possible to establish orderly procedures of the nature of those widely in use by the analytical chemist. No chemist would consider himself worthy of the name if he confined his attempts to identify the components of a substance to measurements and comparison of color and, say, melting point alone. Neither should the textile technologist longer be satisfied with halfway or compromise methods. (*To be continued.*)

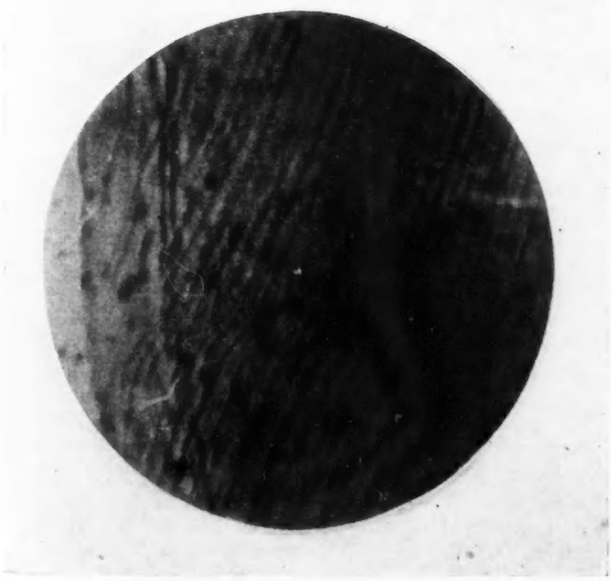


Fig. 5. Striations in flax fiber showing the spiral structure

Article I, "Possibilities of Microscope in Textile Industry," April 27, 1929; Article II, "Types of Microscope Applicable to Textile Industry," May 18; Article III, "Handling the Microscope with Efficiency and Understanding," June 22 and June 29; Article IV, "Methods of Illumination," Aug. 17; Article V, "Useful Accessory Equipment," Sept. 21; Article VI, "Textile Micrometry," Oct. 26; Article VII, "Mounting Textile Specimens," Dec. 14 and Dec. 21, 1929; Article VIII, "Preparing Cross-Sections of Textiles," Jan. 18 and Feb. 15, 1930; Article IX, "Recording Data," May 24 and May 31; Article X, "Photomicrographic Apparatus," Aug. 16 and Aug. 23; Article XI, "Photomicrographic Technique," Dec. 20, 1930, Jan. 24 and Feb. 28, 1931; Article XII, "Microanalysis of Yarns," April 18, May 23 and June 27; "Microanalysis of Fabrics," July 25 and Aug. 29.

Overseers' Round-Table

THIS department offers a new subject for discussion each week and gives readers' comments on problems introduced during previous weeks. The subject which was opened four weeks ago is closed this week and a summary of contributed ideas is given on opposite page

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Presents from Salesmen

Editor, Overseers' Round-Table:

THERE SHOULD be an iron clad rule in every plant against any one accepting presents from either salesman or concerns selling supplies.

Salesmen have entirely too many contacts to be sending out Christmas presents to every overseer or purchasing agent on a purely friendship basis as Pete suggests they have been given in the past.

When a salesman sends out a box of cigars to an overseer or purchasing agent it is usually with the idea of influencing future purchases. It is much better for the overseer to refuse such presents and thus leave no room for suspicion.

W. H. JETER.

Editor, Overseers' Round-Table:

GIVING XMAS presents is a mighty fine thing when done in the right spirit and for the right purpose.

I would not think that when a selling agent and a purchasing agent or overseer became close friends that there would be anything wrong in the selling agent giving either of them a present if he wanted to. However, if it were a new acquaintance I would think it was graft and not the thing to do.

"A SOUTHERNER."

Editor, Overseers' Round-Table:

I THINK there is more good than harm in salesmen's gifts to overseers.

If, through its salesmen, a firm wishes to donate a small, personal appreciation to individuals, it can charge the cost either to advertising or good-will. Most of these little gifts, such as diaries, pencils, cigarette holders or nail files carry the name of the donor, and are a constant reminder that that firm is anxious to serve you. The practice is just as much legitimate advertising as are calendars, blotters or sales letters.

If an overseer does not approve of the products of a firm, no amount of presents is going to influence him to recommend them.

W. F. P.

Editor, Overseers' Round-Table:

BECAUSE I believe that the receipt of gifts by the overseer or purchasing agent is harmful to a frank and unbiased consideration of the giver's product, I am of the opinion that their acceptance should be discouraged, if not forbidden. While at first glance this may seem a harsh condemnation of a harmless practice, experience will tell any executive that while some of the gifts may be a purely personal matter between the salesman and recipient, the majority are backed by the selling concern and are actuated solely by the desire

The Overseer as a

"TO START the meeting off," Superintendent Chase said, "I'm going to tell you a little story. The Sunday after Christmas I drove over to see a friend of mine who manages a mill. I was very pleased to find that his son, who has just started in the textile business, was home over the holiday and, as soon as I got a chance, I got the lad aside and began to ask him how things were going in the mill where he is working. Well, at first the boy said all the usual nice stuff, but finally he sort of got warmed up and told me some things. He has worked, so far, in two departments of the mill and said that he learned a lot in one, but practically nothing in the other. When I asked him why this was, he answered that one overseer could explain things fine, but the other talked a lot but didn't get anywhere—just didn't know how to explain things and got the boy all confused. I tell you, it started me thinking. We depend on the overseers to teach the help and evidently there are some who don't seem able to do a good job in this respect. Is there anything that can be done about it?"

"Funny thing," Pete offered, "but I was reading something about that very subject just the other day. There are some mills that have regular classes for the overseers and second hands. Not only do they teach things to the overseers, but they also teach the overseer how to teach. I think that a lot can be accomplished in explaining to the overseers how they should teach the help and, as Mr. Chase says, it is certainly important if the mill is to have efficient workers. Naturally, the details of what the overseer has to teach vary with each department, but there are certain methods that hold true in all teaching jobs. You all know how much teaching methods have improved in our schools since Bill learned his three R's. I think that either the super should get enough dope on the subject to tell us something, or we could get some outsider, say the principal of the nearest trade school, to give us something on proper methods of teaching. In addition to all this I think the overseers would learn something of the proper methods of presenting any subject to the workers. With many large mills it is impossible for the management to know all the workers and talk over mutual problems with them.

a Teacher

so it is up to the overseers to explain company policy, etc. Many a case is lost through poor presentation and I think all overseers would benefit through some knowledge of how to teach and how to present things."

"Some day, Pete," Bill grumbled, "you're going to get so full of theory that you'll bust. I think that you've all heard enough about some folks being 'born teachers' to realize that a man can't learn how to teach by snappy meetings once a month or so. It's just another one of those ideas that sound fine, but don't work. Now, I know as well as anyone that it is important to have overseers who can manage the help and teach them quickly and correctly. This applies to many things besides actual methods of machine operation. My answer is to have only overseers who have the gift of being able to make themselves understood by other people. We all agree that handling the help is one of the marks of a good overseer, and if an overseer can't put his ideas across we had better get one that can, rather than try and pump stuff into a man who just naturally stumbles all over himself in trying to explain anything. As a parting shot, I might say that I think that overseers do a good job in this respect as it is, and there is little need to worry about it."

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Do *you* believe that it would be practical and advantageous to explain to overseers some of the general principles of teaching?

Overseers and others are invited to discuss this and other questions brought up in the super's talks. Letters accepted and published will be paid for without regard to length. Brevity is desirable.

to retain goodwill or weaken sales resistance. The following case will illustrate my point:

A and B are two salesmen selling dyestuffs to a purchasing agent. A's product, while slightly inferior to B's, sells at approximately the same price, yet A's product is accepted for the simple reason that his concern is more generous in this matter of giving than the makers of the more reliable commodity. Had there been no material benefit to the purchasing agent involved, he would unhesitatingly have ordered the better product. As it is, the quality of his firm's merchandise will suffer because he succumbed to temptation—a very human failing.

To sum up, while a certain amount of Christmas sentiment must always permeate business, the particular brand of sentiment which inspires gifts such as these must be excluded as unethical.

R. S. ALEXANDER.

Health of Mill Workers

Editor, Overseers' Round-Table:

NOT BEING a statistician, or whatever you call those guys that can quote you figures on this and that, I cannot say just how many in the textile group of workers are of foreign birth or were not blessed with an early education. But I do know that where the mills of this section of the country, such as the Amoskeag mills of Manchester, N. H., have taken the pains to establish reading rooms and textile clubs, have cooperated with the civic government in making the foreign born become citizens of the U. S., have helped in the planning of night school courses and in general taken an interest in the matter of betterment and education of the textile worker, I feel that, as a group, the textile worker is as good as those in the shoe factory, or the garment workers, etc. To be sure there are many trades where the skill and education of the average employee must be of a high standard but these trades do not employ such enormous numbers as textiles do so can not be considered in comparison.

It's up to management to defend the textile workers as a group and give some publicity to what they are doing as a whole to better the conditions and education of their workers.

R. A. M.

Word from India on Chewing

Editor, Overseers' Round-Table:

IT IS simply absurd to forbid tobacco chewing in the mill. Tobacco chewing is as necessary as smoking or taking tea. If chewing is to be forbidden, why not also smoking? Many of the girls, women and men in mills who don't chew must be smoking. If smoking is considered a necessity even by bosses, well, tobacco chewing has also an equal claim.

By forbidding it the mill tends to lose. The most efficient workers may be slaves to this habit of tobacco chewing and if it is prohibited, their efficiency will be impaired. They will be unable to concentrate on their work, the quality of goods will suffer, the output will decrease and the cost of production will be higher. Moreover, there will be discontent among the workers. Habit is second nature and it is impossible to make one give it up by a stroke of pen. It must be regulated.

P. B. JOSHI,
Bombay, India.

◆

Summary of Discussion On Presents From Salesmen

Approximately 60% of the contributions stated that it was not right for overseers or purchasing agents to accept Christmas presents from salesmen or supply houses selling to the mill. The feeling was that, as the overseer did not return the gift in kind, there would always be the possibility of suspicion being aroused and that all appearances of evil should be avoided. The 28% who saw more good than harm in the practice stated that there was little or no "graft" in such dealings and that it was a nice gesture of friendship. The remaining 12% held differing views, some saying that small gifts should be overlooked and others that even if there was a rule it could be evaded.

Textile Firms Not Heavily Involved in Carolina Bank Closings

THE recent wave of financial disturbances in the Carolinas which was featured by the closing of several banking institutions last week has not seriously affected many textile mills, according to those in close touch with the situation, although a number of plants had their payroll accounts tied up in the closed banks. It was pointed out that neither the Peoples State Bank of South Carolina, with headquarters in Charleston, S. C., nor the United Bank & Trust Co., of Greensboro, N. C., carried many important textile accounts. Although the Peoples State Bank of South Carolina operated 44 branches in 41 towns and cities, the majority of these branches were in non-textile communities, while most of the independent banks closed since Jan. 1 are located in towns which have no textile manufacturing enterprises. Branches of the Peoples State Bank were operated in the following textile communities: Greenville, Abbeville, Anderson, Chesnee, Columbia, Darlington, Dillon, Gaffney, Greer, Lexington, McColl, Newberry, and Seneca, all located in South Carolina.

R. Goodwyn Rhett, Sr., chairman of the board, and Jerre L. Dowling, president, of the Peoples State Bank, are developing plans for a reorganization and reopening of that institution. The situation in North Carolina, likewise, is not without hope as banks which were in difficulty were closed for the protection of depositors before cash assets had been dissipated beyond reason. It is generally believed that depositors, in most cases, will be paid a large percentage of their deposits in the event of liquidation. In the Greensboro area, as in South Carolina, the recent bank closings will not, it is felt, permanently cripple any important textile concerns.

North Carolina Leads South in New Textile Facilities

DURING 1931 North Carolina again led the Southeast in the growth of textile manufacturing, according to the results of a survey just completed by Ralph C. Maultsby, southern editor of TEXTILE WORLD. Figures compiled from reliable sources reveal that $8,722,600 was invested in additional productive equipment and mill buildings necessary to house that equipment, but exclusive of machinery replacements, in the seven southeastern States. North Carolina, with a total of $3,360,100, topped the list for 1931, with Georgia in second place.

The complete summary, by States, was as follows:

North Carolina	$3,360,100
Georgia	1,953,000
Tennessee	1,620,000
South Carolina	1,003,000
Virginia	434,500
Mississippi	237,000
Alabama	115,000
Total	$8,722,600

Investment in the new plant of the Clark Thread Co., recently completed near Austell, Ga., was omitted from the above figures as the project was announced in 1930 and included in data for that year.

Productive equipment represented in projects announced in 1931, exclusive of machinery replacements, in the seven southeastern States was, as follows:

Cotton Spindles	45,000
Cotton, Silk and Rayon Looms	3,574
Circular Knitting Machines	1,652
Full-Fashioned Knitting Machines	216

The majority of this equipment was of new and improved make, but there were several transfers of machines from other sections of the country. In addition to the above figures, there were several installations of bleaching, dyeing and finishing equipment in the Southeast during the year. Pacific Mills, one of the largest producers of cotton goods, are now adding printing equipment at their Lyman (S. C.) plant. Thread finishing equipment was installed in Gastonia, N. C., yarn manufacturing center, by two new companies: Groves Thread Mills, Inc., and Threads, Inc.

One of the largest projects of the year was the construction of a rayon plant by the Tennessee-Eastman Corp., at Kingsport, Tenn., for the production of acetate yarns. Several plants increased their capacities for throwing and twisting silk and rayon to take care of the large increase in the fabrication of these fibers in the South. There were 40 installations of additional hosiery knitting machinery in the Southeast during the year.

▶ Net Weight Basis for Cotton Sale Gains Support

(Continued from page 00)

for cotton which would be developed through the general adoption of a cotton fabric to replace jute bagging, has been somewhat overestimated by the Bureau of Agricultural Economics. Cotton bagging required for covering one bale weighs 4½ to 5 lb., and, with 15,000,000 bales taken as an average crop, the complete adoption of cotton bagging for baling the crop would provide an outlet for only 135,000 to 150,000 bales per year. An important factor tending to lower this figure, moreover, is that a large amount of bagging is always reclaimed and used again.

The situation is summarized in the following statement to TEXTILE WORLD recently made by a leading agricultural interests:

"Naturally when cotton is cheap, as at present, the question of tare ceases to be so vital. There is less urge on the part of the cotton owner to load his cotton with excess tare and there is less concern on the part of the buyers because loss on account of excess tare is down to a low ebb.

"We are all concerned, however, with the general principle of getting what we pay for, and, as long as the weight of the container is included in the sale price, there will be a temptation on the part of the trade to impose on the situation and put more weight than is needed for proper covering. This forces the purchaser to be on his guard and make the price fit the situation. The whole trouble can, of course, be taken care of by a price based on net weight."

▶ Argentina, as Market for American Cotton Yarns

Argentina's imports of cotton yarns declined from 24,122,000 lb. in 1929 to 20,151,000 lb. in 1930, and further decrease was recorded in the first six months of 1931 when receipts were only 7,694,000 lb. as compared with 11,333,000 lb. for the corresponding period of 1930, according to a report from Trade Commissioner Thomas C. Ballagh, of Buenos Aires, which was published in the Dec. 28 issue of *Commerce Reports*. Whereas the United States supplied 51% of the total cotton yarn imported by Argentina in 1929, this proportion was only 37% in 1930, largely because of severe price competition from Italian spinning mills.

In 1930, the report shows, the United States shipped more than 3,000,000 lb. of mercerized combed yarns to Argentina, as compared with only 209,000 lb. of non-mercerized combed qualities. Local agents were said to have expressed the opinion that 1931 would show an increase in the consumption of combed yarns because underwear knitters were replacing mercerized yarns with non-mercerized combed yarns.

An analysis of the Argentine market, based on estimates of local yarn agents, indicates following general requirements: Carded yarns—10s to 34s, single, and 8s to 28s, two-ply; mercerized yarns—60s to 140s, single; 22s to 120s, two-ply; and 100s to 120s, three-ply; combed yarns, not mercerized—18s to 34s, single; and 36s to 60s, two-ply.

The report states that there are not over 15 or 16 American cotton yarn shippers represented in Argentina, but that competition between them is very keen, and there are constant requests from other local agents for cotton yarn lines of producers in the United States. The marketing of American yarns under trade-marked brands was said to be more satisfactory than selling unbranded yarns.

Jack Card Bravely Peers Into 1932

Editor TEXTILE WORLD:

I suppose you want my usual year-end prediction.

As preparation, I have read carefully all—or nearly all—the financial reviews of the various newspapers. They're pretty poor picking. I've never seen such a scarcity of predictions in my life. Somebody or something has scared the big fellows off alright. The most courageous statement I read was to the effect that "the low point of the depression would be reached in 1932." I bet the poor man will worry all year.

Someone asked me the other day how we'd know when the depression was over. The only answer I could think of was that I'd know it just as soon as my income started going up instead of down.

But, if you print this, please make it clear that my calculations might be upset if Abyssinia unexpectedly went off the gold standard.

JACK CARD

▸ Sloan Presents Encouraging Employment Data

An encouraging picture of employment and operating conditions in the cotton textile industry is presented to Walter S. Gifford, director of the President's Organization on Unemployment Relief, in a letter from George A. Sloan, president of the Cotton-Textile Institute, Inc.

Mr. Sloan, a member of the advisory committee of the President's organization, points out that operations in cotton mills in October of this year were 83% of the October average for the last 10 years, and for the year 1931, to December, 87% of the ten-year average for the same period.

During the last year, Mr. Sloan points out, there has been a nearer approach to uniformity of running time than in the preceding ten years, and peaks of overproduction have been avoided.

Mr. Sloan expresses some apprehension that this condition may not continue due to the fact that a relatively small number of mills have ignored constructive recommendations to shorten the work week and eliminate night work for women and minors. The shorter work week has been widely adopted, he states, while 84% of the cotton textile industry is not employing women and minors on night shifts.

▸ Tension Variation in Ring Spinning

In the article "Variation of Yarn Tension During Ring Spinning," by Carl D. Brandt, published on page 22 of our issue of Oct. 31, Figs. 3 and 4 were erroneously transposed. We regret the confusion from this mistake.

Lessons of Depression Stressed in Comments on 1932 Textile Outlook

THE lessons of the depression and the prospects for a slow revival are stressed in New Year messages by leaders in textile and other divisions of American business.

Ernest L. Starr, director of the Durene Association of America, said:

"It seems to me that the outstanding sign of the times is a growing tendency on the part of the big men of the country to look for 'reasons why.' Many thinkers are aware that this period of reorganization may be even more valuable than were the years of rampant production and a sky-rocketing stock market. Today we are looking sanely at such matters as basing supply upon actual consuming power."

S. R. Fuller, president, American Bemberg Corp., said:

"Our company wishes at this time to express appreciation of the confidence and energy of individual mills, manufacturers and retailers whose response to the company's offer of cooperation more than doubled the total poundage of orders received in 1931 as compared to 1930.

"American Bemberg Corp. looks forward to the lifting of business depression with confidence."

Robert P. Lamont, Secretary of Commerce, offers the following comment on export trends during 1931:

"In foreign trade, preliminary estimates indicate a decline in quantity during 1931 of 18 to 20% in exports and of about 10% in imports compared with an indicated drop of 16% in our industrial output.

"Present difficulties, formidable as they may be, are temporary, and the recuperative powers of our country, stimulated by the government's constructive program, are sufficient to contribute in large measure to the restoration of world prosperity."

Frederick M. Feiker, director, Bureau of Foreign and Domestic Commerce:

"Despite the curtailment of purchasing power throughout the world, American exporters sold abroad in 1931 a substantial number of articles of our production in larger quantities than in 1930 and in many cases in approximately as great or greater volume than in 1929. Among these items are hides and skins, patent side upper leather, refined cottonseed oil, cotton denims, cotton dresses, adding machine paper, paper bags, and power driven metal-working machinery.

"The percentage decrease in value of exports to Asia was 19%, while for all Europe the decline was 36%. Exports to France and Germany dropped in value as much as 42% and those to the United Kingdom fell off 34%. On the other hand, shipments to U.S.S.R. (Russia) in Europe for the 10 months ended October, 1931, were within 1% of the total for the corresponding period of 1930. Both Europe and Asia purchased large quantities of raw cotton, copper, wheat, and other industrial raw materials."

▸ Hosiery 1932 Outlook Clearer, Meyer Says

The New Year message issued to the hosiery industry by William Meyer, president National Association of Hosiery & Underwear Manufacturers which was referred to in last week's issue, contains some paragraphs of especial interest, and deserving more specific mention than space afforded at that time.

Mr. Meyer sees 1932 as heralding "a gradual upturn in general business."

He said:

"The full fashioned hosiery industry has gone through a painful house cleaning. It faces the new year with its situation considerably clarified. Wages have been adjusted, inventories cut down to approximately normal levels and credits tightened up. In my opinion, it has scraped the bottom, and a firmer price structure may logically be expected when it becomes clear that the raw silk situation is fully stabilized.

"Much the same may be said of seamless hosiery. On a number of lines of goods in this category, as well as in full fashioned, manufacturers' profit margins have shrunk so radically that the situation will be bettered almost automatically with the first sign of improvement in general business. Fancy half hose volume at popular prices will undoubtedly continue very large. Infants' hose as a class is probably in the best position of any branch of the industry.

"Knit underwear enters the new year in excellent statistical position. Stocks are low and unfilled orders compare favorably with this time a year ago. Rayon garments will undoubtedly show sales increases, and better merchandising policies will make headway during the next year.

"I urge again that manufacturers follow the policy, so long advocated by our Association, of manufacturing against orders only. Close adherence to this policy will do more than any other single thing to hasten the return of normal business at normal profits."

▸ T. H. Burkhardt Acquires Interest in N. C. Silk Mills

T. H. Burkhardt recently purchased a substantial interest in the North Carolina Silk Mills, Inc., Burlington, N. C., and has been elected vice-president and general manager of this unit. Mr. Burkhardt resigned as general superintendent of the Burlington group of mills to accept the new position with the North Carolina Silk Mills, Inc., which is a unit in the same group. The plant will be substantially enlarged.

NEWS about MEN

Jerome A. Newman, of New York, has been elected chairman of the management committee of General Cotton Corp. It is understood that General Cotton Corp. is planning to renew active work along the lines which brought it into existence.

Charles H. Nintzel, associated with Joshua L. Baily & Co., New York, has been made a partner of the firm. **Ellwood W. Brooks,** son of the late Charles H. Brooks, original partner of Joshua L. Baily, has retired from the firm after 40 years of service.

Samuel M. Jones, president of Arnold Print Works, North Adams, Mass., is enjoying a vacation in Florida.

A. W. Lissauer, president of the Louisville (Ky.) Drying Machine Co., manufacturers of textile dryers, has been elected president of the Associated Industries of Kentucky.

George A. Mattern, vice-president of Gantner & Mattern Co., San Francisco, knit goods manufacturers, has landed in England for a joint business and pleasure trip through Europe. He has stated that he would look for new types of fancy knitting machinery in connection with plans for expansion of some of the departments of this firm.

Samuel F. Rubin, president and general sales manager of the Merit Hosiery Co., Brooklyn, N. Y., has reorganized his selling force by appointing new representatives. **Joseph Berkowitz** has been named supervisor of the middle Atlantic states. **Harry W. Curran,** formerly of Combine Hosiery Corp., New York, will handle the major accounts in New York and Brooklyn territory.

Alex Nathan, formerly of the Van Raalte Co., New York, will be in charge of the Michigan, Wisconsin, and Minnesota territory. **Irving Spevack.** also formerly with Van Raalte, will represent the Merit company in Westchester county.

Roger N. Kimball, president of the Allen-A Co., Kenosha, Wis., who has been chosen president of the Allen Co. of Canada, Ltd., Hanover, Ont.

Roger N. Kimball, formerly vice-president of the Allen Co. of Canada, Ltd., Hanover, Ont., has been made president to succeed the late Kenneth W. Allen. **Allen J. Rodgers,** who has been with the company since 1919, was elected vice-president to succeed Mr. Kimball, and has also been made general manager. He will manage the company from the Toronto offices.

Horace W. Bernstein, of Biddle-Bernstein Co., Philadelphia, has gone to Scotland to visit the Heather Mills. He will stop in London on the way back and return to this country the latter part of January.

David Duncan, secretary of the Lonsdale (R.I.) Co., has been elected a director of General Cotton Corp.

Otto Schuman, secretary of the Reading (Pa.) Maid Hosiery Mills, Inc., spoke before the Reading Rotary Club recently. He reviewed the history of full-fashioned hosiery manufacture in this country and told of the first full-fashioned machines of American manufacture, which were made in Reading in 1898 by **Ferdinand Thun** and **Henry K. Janssen** in a small factory in Reading which they had started for a braid and narrow fabric plant.

Abbot Stevens, treasurer of M. T. Stevens & Sons Co., North Andover, Mass., is chairman of the freight rate committee in charge of a protest by New England manufacturers against proposed advances in rates from New England to New York on wool goods.

Herman Sheplan, has been elected treasurer of the recently organized Philadelphia (Pa.) Hosiery Mills. **David Brickman,** of New York, will be an officer of the new company also.

L. G. Drummond, formerly with the Blue Ridge Woolen Co., Chambersburg, Pa., has been made general manager of the Thayer Woolen Co., No. Oxford, Mass. He takes the pace of **J. Henry Pickford,** who has resigned.

Daniel A. Wechsler, merchandise manager and stylist of General Silk Corp., New York, is leaving to organize his own business. Details of the new company are not yet available.

Robert R. Salembier, manager of the cutting-up trade sales division of Belding Heminway Co., New York, resigned, effective Jan. 1. Mr. Salembier started with A. D. Julliard & Co., New York. He then organized a firm under the name of Salembier & Clay, Inc., specializing in silks. He joined the Belding Heminway organization in 1930.

Textile Calendar

Wool Blanket Manufacturers Quarterly meeting, New York, Jan. 14, 1932.

Textile Forum, N.A.C.M., for master mechanics, Chamber of Commerce Bldg., Boston, Mass., Jan. 14, 1932.

Annual Dinner, Silk Association of America, Waldorf-Astoria Hotel, New York, January 21, 1932.

U. S. Institute for Textile Research, meeting of Research Committee, Chemists' Club, New York, Jan. 21, 1932; meeting of Executive Committee and Board of Directors, Jan. 22, 1932.

Textile Forum, N.A.C.M., for overseers of warp preparation and weaving. Chamber of Commerce Bldg., Boston, Mass., Feb. 11, 1932.

Textile Forum, N.A.C.M., for overseers of dyeing, bleaching and cloth room, Chamber of Commerce Bldg., Boston, Mass., Mar. 10, 1932.

Committee D-13, American Society for Testing Materials, Spring Meeting, Providence, R. I., March 10-11, 1932.

Silk Association of America, Annual Meeting, 468 Fourth Avenue New York, March 23, 1932.

National Association of Hosiery and Underwear Manufacturers, Annual Meeting, Commercial Museum, Philadelphia, Pa., April 14, 1932.

Knitting Arts Exhibition, 28th Annual Show, Commercial Museum, Philadelphia, April 11 to 15, 1932.

Textile Forum, N.A.C.M., General Meeting for agents and superintendents, Chamber of Commerce Bldg., Boston, Mass., April or May, 1932. (Date is to be announced later.)

Second National Cotton Week, nation-wide promotional campaign, May 16 to 21, 1932.

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 17 to 22, 1932.

Robert W. Boys, superintendent for the last ten years of the Farr Alpaca Co.'s cotton division, Holyoke, Mass., has resigned. Mr. Boys was formerly president of Boston Textile Club and is serving his 22nd year as president of the Textile Club of New Bedford. He was formerly connected with the Manhasset Mfg. Co., Putnam, Conn.

Joseph E. Hirscher has been named successor to **H. H. Snader** as director of sales for the Vanity Fair Silk Mills, Reading, Pa. Mr. Hirscher has been with the company for 17 years and recently has been western sales manager.

W. A. Spafford has resigned from the General Silk Corp., New York, to become associated with the Kansai Silk Importing Co., New York, where he will assist in the merchandising of raw and thrown silk.

M. Harry Whelan, purchasing agent of the Pepperell Mfg. Co., at Biddeford, Me., has been elected president of the Saco-Biddeford Kiwanis Club for the new year.

J. E. Howell, formerly superintendent of the Lullwater Mfg. Co., Thomson, Ga., has accepted a position as superintendent of the mechanical department at the Austell (Ga.) plant of Clark Thread Co.

Francis S. Nettleton, a superintendent of the Hockanum Mills Co., Rockville, Conn., and Mrs. Nettleton are enjoying several week's vacation in Bermuda.

Herbert E. Hornberger has resigned his position as superintendent of the underwear mills of the West Knitting Corp., Wadesboro, N. C.

J. R. Gebhart, head of the blanket department of the American Woolen Co. for many years, has become associated with F. R. Bouvier & Co., New York, which is expanding its production of camp and institution blankets.

Robert W. Boys who has resigned as superintendent of the cotton division of the Farr Alpaca Co.

P. F. O'Neil, former purchasing agent of the Bigelow-Sanford Carpet Co., Inc., New York, has been appointed assistant to **H. V. Campbell,** director of sales. **W. R. Murray,** who has been with the company since 1922, and Mr. Campbell's assistant since 1926, has been appointed purchasing agent.

R. B. Burnham has resigned as superintendent of Mills No. 2 plant, Woodruff, S. C., to accept a similar position with the Pelzer (S. C.) Mfg. Co. Plant No. 4, succeeding **J. F. Blackmon,** who has been promoted to general superintendent, effective Jan. 31.

Frank M. Little, formerly with McCurrach Organization, Inc., New York, has joined the sales staff of the cravat department of Cheney Bros., and will cover the Southern California territory.

H. A. Jackson has resigned his connection with the men's wear department of the Botany Worsted Mills' sales force.

Albert E. Escott, formerly southern representative of the *American Wool & Cotton Reporter,* has accepted a position as office manager for The Clark Thread Co. of Georgia, Austell, Ga.

Fred Grant, Arthur Osberg, and **Earl Woodworth,** who have been on the retail staff of Cheney Bros., South Manchester, Conn., have resigned. They will not be replaced at the present time.

W. T. Boland is the foreman in charge of the Laurens (S. C.) branch plant of Kattermann & Mitchell Co., It was erroneously published in the Mill News section of TEXTILE WORLD, Dec. 26, that W. B. Bollin was superintendent of this plant.

George C. Cauble, formerly overseer of carding at Griffin (Ga.) Mills, Inc., is now superintendent of carding at the Clark Thread Co. Mr. Cauble was also a former overseer of carding at Wiscassett Mills Co., Albemarle, N. C., and the Dixie Spinning Mills, Lupton City, Tenn.

Charles Emery has been made overseer of weaving at the Wilton (Me.) Woolen Mills.

Edward C. Russell, at one time employed in the Schuster Woolen Co., East Douglas, Mass., has become overseer of finishing in the Rochdale (Mass.) Mills of the American Woolen Co.

J. S. Gammon, formerly overseer of spinning at the Exposition Cotton Mills, Atlanta, Ga., is now superintendent of spinning and twisting at the new Austell (Ga.) plant of Clark Thread Co.

Obituary

H. T. Poe

H. T. Poe, secretary and assistant treasurer of the F. W. Poe Mfg. Co., Greenville, S. C,, died last week at his home following a lengthy illness. He had been a resident of Greenville for more than 50 years, and with various members of his family, had been in the textile industry. He is survived by his brother Nelson C. Poe, president of the company; the late F. W. Poe was also a brother.

Cecil L. Morrison

Cecil L. Morrison, overseer at the Sanford Mills, Sanford, Me., died Dec. 28 from injuries received in an automobile accident on Thanksgiving Day. Mr. Morrison was born in Alfred, Me., 42 years ago. He was a Mason. He is survived by his widow, two brothers and his father.

Frank W. Thorp

Frank W. Thorp, 54 years of age, former boss dyer for the Tingue Mfg. Co., Seymour, Conn., died Dec. 21 at his home. He was born in Bradford, England, and got his textile training at the Maningham Mills there. He went to Seymour 25 years ago from England, and made a place for himself, especially among the musicians there. He was a Mason, an Oddfellow, and an Elk. He leaves a wife, a son, and a daughter.

Harry Burwell

Harry Burwell, chief accountant of the Stafford Worsted Co., Stafford Springs, Conn., died suddenly Dec. 29 at the Johnson Memorial Hospital; he was 60 years of age. Mr. Burwell was a native of Stafford and had previously conducted a jewelry business. His widow, a daughter, and one brother survive.

Roland C. Finley

Roland C. Finley, for many years an active news correspondent for TEXTILE WORLD in the Worcester (Mass.) district, died last week in that city, at the home of his daughter, Mrs. John J. Hester, at the age of 64 years. Mr. Finley had a long and prominent newspaper career in Worcester. He went there in 1889, and served as court reporter on the Worcester *Telegram.* In 1890 Mr. Finley was chosen city editor and held that position for the greater part of 30 years. In 1918 he became connected with the chamber of commerce, later returning to the *Telegram* as financial editor. He finally left the paper five years ago to take charge of the physicians' and surgeons' bureau at the chamber of commerce. Many cub reporters who served under Mr. Finley profited by his training, and have since become well known as newspaper men.

NEWS about MILLS

Cotton

Avondale Mills. The Pell City (Ala.) plant of this company is being completely equipped with Barber-Colman automatic spoolers and high speed ball warpers. The Alexander City (Ala.) plant is also being completely equipped with Barber-Colman automatic spoolers and superspeed warpers.

R. A. McLaughlin Co., Inc., New York, has leased a part of the old **Uncas Finishing Co.** plant at Norwich, Conn., and will begin the manufacture of bed spreads and draperies with 50 looms now being installed. Operations will start about Jan. 15 with 60 employees.

***Clark Thread Co.,** Austell, Ga. Stoney Drake, manager, states that the plant will be in operation within the next 60 days. The main factory building, the boiler room, and the opening room, are the three buildings nearing completion and readiness for the installation of equipment; work is being satisfactorily pushed on the 50 dwellings for operatives. The main building is 100 x 500 ft.

***Washington Mfg. Co.,** Tennille, Ga. Machinery is being overhauled and preparations are being made to reopen the mill the first part of the new year. W. B. Smith, president, recently returned from Chicago, where he attended a meeting of the owners and directors of the company.

Androscoggin Mills, Lewiston, Me., have stopped the manufacture of cotton fabrics and closed the cotton department. Meanwhile the rayon department is manufacturing rayon goods at capacity production. Agent Tousignant states that every effort is being made by the mill officials to bring about a resumption of full time operations in all departments.

Pacific Mills, Dover, N. H., have resumed a full time production schedule, effective Jan. 4, replacing a three-day week operating basis. Operatives have agreed to a 10% wage reduction.

Breslin Textile Mills, Inc., Philadelphia. Frank E. Slack has been appointed as receiver under bond of $10,000 in a friendly suit filed by the Hart Dyeing Co., Philadelphia.

Winnsboro (S. C.) Mills, originally incorporated in Massachusetts, have been reincorporated in South Carolina. In the new corporation Harry C. Hand is named as president, William M. Stevens, secretary, and A. Roy Myers, treasurer.

Wool

Draper Brothers Co., Canton, Mass., has held up the completion of plans for a proposed new steam power house on Draper Lane, and the building of the new unit will be postponed for the time being. It is reported that work may go ahead in the spring.

**Indicates previous mention of project.*

Horner Brothers Woolen Mills, Eaton Rapids, Mich., are giving employment to 350 workers, as compared with a working force of about 250 persons at this time a year ago. They expect to keep the present quota for an indefinite period.

Elm Mills, Inc., Tilton, N. H., will make a line of low end suitings, pantings, flannels, etc., which will be sold through Begiebing & Bihler, 257 Fourth Ave., New York, newly formed agency. This activity will in no way conflict with the present distribution of the women's wear fabrics through Deering Milliken & Co., Inc., New York.

Marshall Spinning Co., Camden, N. J., will be operated by Walter Marshall, formerly associated with George W. Lefferts & Co., Philadelphia, worsted spinners, now out of business. He has taken a lease on the Salisbury plant of the Cleveland (Ohio) Worsted Mills, at Camden, which has been idle for some time. The company will produce worsted yarns largely for the knitting trades, and will spin from 6s to 30s, by the Bradford system.

Garfield (N. J.) Worsted Mills have been closed. Production has been transferred to the **Botany Worsted Mills,** Passaic, N. J. The Garfield plant was acquired by **Botany Consolidated Mills, Inc.,** several years ago. Operations have been gradually curtailed at the Garfield plant so that only a comparatively small number of workers were affected by the final closing, whereas the same personnel is in charge of the Garfield business, which is now being done in Passaic.

***Globe Mills** of the **American Woolen Co.,** Utica, N. Y., are pushing the installation of new machinery and plan to resume operations late in February.

Philmont Worsted Co., Woonsocket, R. I. As of Dec. 31, this company has been merged with **Guerin Mills, Inc.,** Woonsocket, the new name to be **Philmont Mill of the Guerin Mills, Inc.** The entire issue of the former Philmont Worsted Co. has been owned by the Guerin company since 1922; therefore this change means only a simplification of corporate structure which will not affect the policies or personnel of the company, but will enable it to better serve its customers.

Knit

Belknap Mills Corp., Laconia, N. H., has announced that it will go back into the hosiery business again. This company became connected with **Contoocook Mills Corp.,** Hillsboro, N. H., in 1929, and for the last nine months has been with **Sulloway Mills,** Franklin, N. H. Management, policy, and personnel of the new company remain the same. J. P. Voorhees & Son, Inc., New York, will handle the account.

Blood Knitting Co., Amsterdam, N. Y., has started a 24-hour operating schedule in the spinning and knitting departments, preparatory to manufacturing lightweight garments for spring delivery. From July 1 to Dec. 1 the company maintained a 24-hour schedule on heavy weight goods. Since Dec. 1, however, most departments have run on a day basis except for a one-week inventory shut down in two departments.

Avon (N. Y.) Knitting Mills property was sold Dec. 21 in a foreclosure sale to Peter L. Zifka of Avon, for $10,500. Mr. Zifka will use the buildings for warehouse and display room for a line of tractors. The knitting machinery is still in the main building and litigation to determine its ownership is now underway. The Genesee Valley National Bank & Trust Co. claims that it has a mortgage on the machinery; the assignee, Austin W. Erwin, claims otherwise, and states that the proceeds from the sale of machinery should be given to the creditors.

Simax Knitting Mills., Brooklyn, N. Y., is the new company name for the former **Simax Golf Hose Mills, Inc.** The change of name is due to the fact that the company no longer confines its activities to golf hose exclusively.

Hudson Silk Hosiery Co., Inc., Charlotte, N. C., has ordered machinery for an initial silk throwing unit from the Atwood Machine Co., Stonington, Conn., including double-deck winders, model 5B doubler-twisters, and Monarch high-speed double deck twisters, to be installed in the new plant addition in January.

Nazareth (Pa.) Waist Co., sustained fire loss at its mill on Dec. 29. An official estimate of damage has not been announced, but it will be repaired.

Florine Hosiery Mills, 1235 Columbia Ave., Philadelphia, Pa., recently organized to operate a knitting plant, will be headed by William Burke, 1820 North 54th St., Philadelphia, president; Ethel Burke, same address, will be treasurer.

Web Knitting Mills, Philadelphia, Pa., have been organized by Louis I. Bellow, 5423 Gainor Rd., Philadelphia, and J. Herman Kahn, 6110 Catharine St., same city, to operate a local plant. Mr. Bellow will be treasurer and representative.

Quality Knitting Co., Stowe, Pa., Reuben B. Hunter, president, at a Christmas party for his employees, announced that the output for 1931 had exceeded the previous high year's production by 15,000 dozen. Mr. Hunter predicted full-time operations for 1932 at his plant.

Richmond Hill (Ont.) Knitting Mills, Ltd., Toronto, is the name of a new company which plans to renovate a 3-story mill formerly used as a shoe factory.

Harvey Knitting Co., Ltd., Woodstock, Ont., Canada, is to receive a considerable amount of machinery and equipment from the **York Knitting Mills, Ltd.**, Toronto, the manufacturing division of **Woods Underwear Co., Ltd.**, of Toronto. The Woods company, incorporated for the purpose of purchasing materials for and selling the products of the Harvey company and **Hosiers, Ltd.**, Woodstock, has announced the move; when completed, the staff of the Harvey Knitting Co. will be increased by 100 workers. Between 40 and 50 men will be sent from the York plant to instruct the local workers.

Regent Knitting Mills, Ltd., Montreal, Que., Canada, has decided to raise the existing dam on the North River, near its plant at St. Jerome, Que. Construction work will consist mainly of improvements to the dam in order to improve the power facilities which the company controls.

Silk

National Woven Label Co., Paterson, N. J. A group life insurance policy has recently been made whereby each worker receives insurance in amounts ranging from $1,000 to $2,500, according to rank. The policy is of the contributory type, the premiums being shared by the employees and the employing company.

Belding Heminway Co., New York. About 85 representatives of the company met Jan. 7 under the leadership of Frank J. Collins, recently appointed manager of the hosiery division, in which department the company plans to carry on an intensive promotion campaign during the new year.

Stehlisilks Corp., High Point, N. C., has added more than 150 operatives to its working force, the increased quota to be continued indefinitely.

Elysburg, Pa.—Claude Daniels, Elysburg, and William Fryberger, Shamokin, Pa., are organizing a new silk manufacturing company and have negotiations in progress to take over the former mill of the **Post & Sheldon Corp.**, at Elysburg, abandoned some months ago. They expect to give employment to about 150 operatives.

Tioga Silk Co., Inc., York, Pa., which has leased the former **Diamond Silk Co.** mill, will need 100 more employees some time in the next few weeks. The new plant has 40,000 sq.ft. which will give the company a total of about 60,000 sq.ft. The mill has been in steady operation for three years, working on a full time schedule. The New York office is at 469 Seventh Ave.

***Hillsgrove (R. I.) Silk Co., Inc.**, Ralph Vicario, permanent receiver, has filed a petition for authority to sell the assets of the company. The petition will be heard Jan. 11 at 10 A.M., in the Kent County Superior Court.

**Indicates previous mention of project.*

Finishing

***Danvers Bleachery & Dye Works**, Peabody, Mass., of the **Naumkeag Steam Cotton Co.**, Salem, Mass. Regarding the transfer of the bleachery to a town more properly appreciative of having industrial activity within its limits, no decision has yet been made. Treasurer Ernest N. Hood, of the Pequot Mills, has written to Mayor Sullivan of Peabody, calling his attention to the fact that other towns have offered attractive inducements in the way of low-priced plants and low tax valuations. The inference gathered from his letter, is to the effect that if Peabody wishes the bleachery to remain, it will have to compete with the attractive outside offers.

Yarn Glazing & Winding Co., Providence, R. I. Creditors have received a letter from Huddy & Moulton, attorneys, stating that the sum of about $1,000 is available for distribution against claims aggregating about $33,000. The receivership began in 1925 and was complicated by the disappearance of the receiver, William K. Yery.

Miscellaneous

Hackett & Gary Mattress Works, Trenton, N. J., recently organized, are now operating a factory at 58 South Logan St.

Dominion Linens, Ltd., Guelph, Ont., Canada, have sold their vacant mill building in Tillsonburg, Ont., to H. M. Fair, of Delhi, Ont., who will use it for a tobacco factory. The building has been idle for nearly three years.

◆

New Books

COTTON YEAR BOOK of New York Cotton Exchange; compiled under direction of Alston H. Garside, economist of the exchange, New York.

A complete statistical picture of the world supply and world distribution of cotton and of the cotton market is contained in the fourth "Cotton Year Book" just issued by the New York Cotton Exchange. Covering foreign growths as well as domestic, the volume sets forth in statistical form the essential facts related to the decline in prices during last year. Comparisons with records of previous years suggests that the trade will work out of its present position of over-supply and prices will eventually be restored to more normal levels.

Tables are given which indicate that the drastic decline in cotton during the 1930-31 season was due only in part to the world supply being above average, the other and more important factor being the contraction in consumption as a consequence of the world business depression. Consumption of American cotton declined much more than consumption of foreign cottons, which resulted in the end-season stock of American cotton being much greater relative to normal than the end-season stock of foreign cotton. It is stated in the volume that the consumption pendulum is now swinging toward American cotton and away from foreign growths. The tables on acreage, production, and consumption show how such low prices as prevail at present normally bring about reduced production and increased consumption.

CALCULATIONS AND COSTINGS FOR KNITTED FABRICS; by Professor W. Davis, M. A.; Isaac Pitman & Sons; New York; $3; 226 pages.

This book has been prepared in order to meet a definite need in that section of the textile industry devoted to knitted fabrics. The subject is developed from first principles illustrated by worked examples and problems which arise in practice. Practically all types of calculations encountered in the knitting industry are dealt with in a concise yet complete manner. The appendix contains solutions to problems encountered from day to day in the different stages of hosiery manufacture.

Business Literature

Multi-Speed Drive. Westinghouse Electric & Mfg. Co., Pittsburgh, Pa. Information on the application, operation and construction of this unique drive is contained in a new leaflet which also includes a table of output speeds and principal dimensions.

Oxidation of Vat Colors. Roessler & Hasslacher Chemical Co., New York. Pocket-size booklet contains useful information on the various phases of vat dyeing and the oxidation of vat colors.

Pumps and Air Compressors. Worthington Pump & Machinery Corp., Harrison, N. J. Recent series of bulletins describe various type of centrifugal pumps, steam pumps, power pumps, air compressors, and multi-speed drives manufactured by this company.

Recording Instruments. General Electric Co., Schenectady, N. Y. Specifications and price list of various recording instruments manufactured by this company are contained in an 18-page illustrated booklet.

Recording Instruments. Brown Instrument Co., Philadelphia, Pa. Accuracy of operation and ruggedness in service are particularly stressed in a new catalog offered by this company and which is devoted to the description of the Potentiometer Pyrometer.

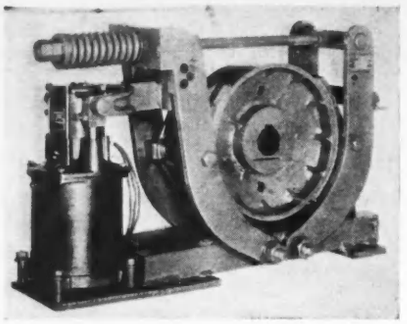
Recording Instruments. Brown Instrument Co., Philadelphia, Pa. Recently developed electric flow meters for recording steam consumption are illustrated and briefly described in a recent bulletin.

Roller Bearings. Crompton & Knowles Loom Works, Worcester, Mass. Various points of application of Hyatt roller bearings on new C. & K. looms are pointed out and the reason for their use is explained.

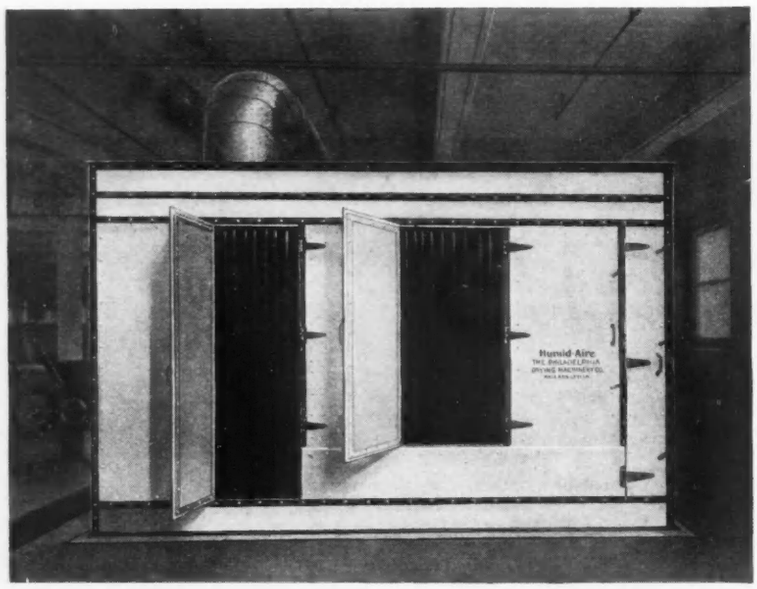
Rubber Compounds. American Wringer Co., Inc., Woonsocket, R. I. A booklet entitled "Tensilastic and What It Means" tells in detail of recent developments in rubber compounding and fabrication, particularly pertinent to its use in rolls for the textile industry.

Short-Center Drives. E. F. Houghton & Co., Philadelphia, Pa. A 148-page belt treatise has been compiled and is now offered to the industry. The book contains charts, tables, and engineering data on 5,000 standard Vim efficiency drives, ranging from 5 to 100 hp.

New Machinery *and* Processes



Shoe-type weather-proof brake for a.c. mill motors



Machine for restoring normal moisture-content to fabrics

Conditioning Machine

BELIEVING that presses, dryers, calenders, and other finishing machinery often reduce the moisture content of fabrics to below normal, the Philadelphia Drying Machinery Co., Philadelphia, Pa., has developed a new machine for restoring the normal moisture content speedily and efficiently. It is claimed that this machine, which is known as the Hurricane Humidaire, will impart any desired degree of moisture regain to worsteds, woolens, cottons, silks, and rayons.

As the goods pass through the machine, either under tension or in loose festoons, they encounter currents of cool air thoroughly saturated with water vapor. Other features include close control and the handling of a large volume of goods in minimum time and space. The machine can, if desired, be operated in range with presses or other continuous equipment, requiring no extra labor.

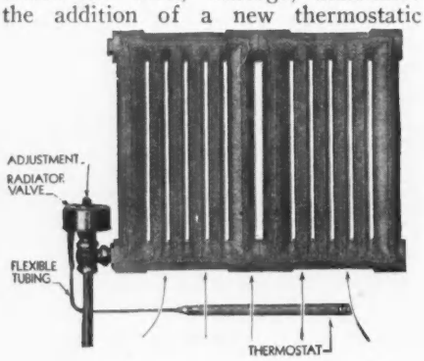
Motor Brake

A NEW line of shoe-type, weather-proof, Thrustor-operated brakes for a.c. mill motors where severe requirements must be met is announced by General Electric Co., Schenectady, N. Y. It is stated these brakes provide quick, cushion-like braking in either direction of rotation with either light or heavy loads, and are adjustable for braking torque over a wide range.

It is further asserted that the characteristics of the Thrustor make it particularly well adapted as an operating medium, and that it operates well within the time required to release and set a brake satisfactorily. In a fraction of the time required for the Thrustor to move through its complete stroke, the motor comes up to full speed, and the speed of thrust remains constant during the remainder of the stroke. It is also cited that the use of the Thrustor minimizes braking mechanism inertia, shock, and noise.

Thermostatic Radiator Valve

TO THEIR line of temperature regulators, Powers Regulator Co., 2720 Greenview Ave., Chicago, announces the addition of a new thermostatic



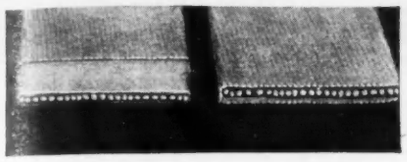
Thermostatic valve with bulb type thermostat

radiator valve. It is a self operating regulator, employing the same principle of operation which is used on other regulators manufactured by this company.

It is pointed out that the thermostatic element is located outside of the radiant heat zone of the radiator, so that it will be influenced only by the actual room temperature. It is claimed that accurate temperature control is secured with this regulator. This is said to be due to the larger sensitive surface of the thermostat and to the greater area of the diaphragm bellows used to open and close the valve. The manufacturer asserts that these features make the action of the regulator more powerful and render it more immune to pressure changes in the steam supply line.

Improved Cone Belt

AN IMPROVED construction design for cone belts is announced by Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J. It is asserted that a nice balance between lateral stiffness and flexibility has been



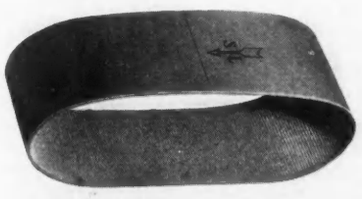
Cone belt constructed of strong cords embedded in rubber

obtained and that the belt runs smoothly, shifts easily, and has long wear.

The new construction is known as Condor Whipcord. In detail, it consists of continuously wound, strong whipcords, each separated from the other and embedded in rubber. It is pointed out that internal friction between adjacent cords is impossible. Traction between belt and cones is uniform at all times, it is stated. The running surface is flexible, closely woven duck treated with a special red friction rubber. It is further asserted that the conformation of the belt to the cones is natural and positive.

Long-Draft Aprons

INSTALLATION of new equipment for handling leather and making long-draft aprons is announced by Saco-Lowell Shops, 147 Milk St., Boston, Mass. It is explained that this step was taken to enable the company to produce good-quality aprons in sufficient quantity and in the most economical manner.



New long-draft apron

The texture of the apron is described as firm, uniform, and free from sponginess. The surface in contact with the cotton is said to possess good fiber-gripping qualities, which help to secure uniform drafting action. A special finish which is high in tractive properties has been applied to the surface in contact with the steel rolls.

Special equipment has been employed in fashioning the joint with a view to securing pliability and freedom from roughness. It is asserted that careful attention is given to the edges to insure that they will be straight, flat, and true. Although care is exercised in the selection of skins, uniformity of thickness is further secured by a special trimming machine, which is said to operate with great accuracy.

New Dyestuffs

General Dyestuff Corp., 230 Fifth Ave., New York, has announced the following new dyestuffs:

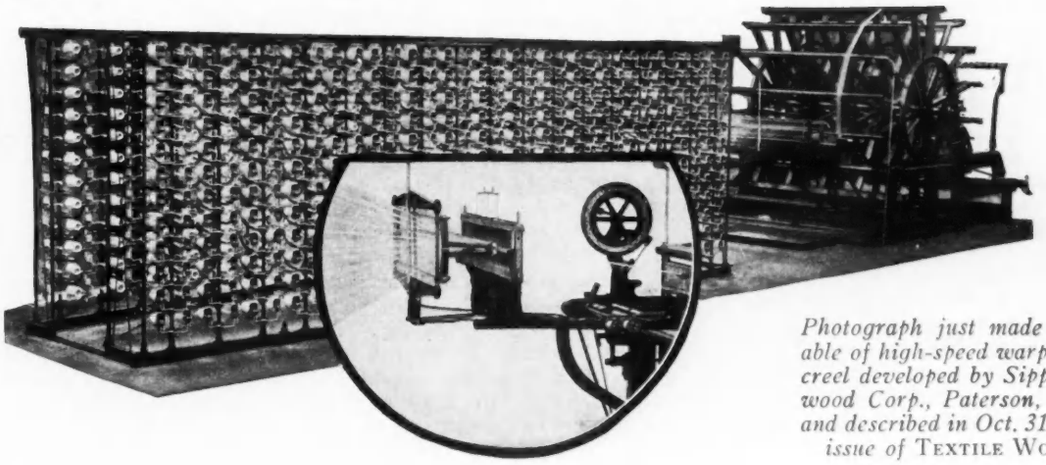
INDANTHREN BRILLIANT PINK 3B, a homogeneous vat dyestuff of the same clarity of shade as INDANTHREN BRILLIANT PINK R and B, but much bluer. In view of its excellent fastness to washing, this color is recommended for dyeing wash styles, and is suitable for colored goods to be bleached in the piece by the boiling soda-chlorine and the combined chlorine-peroxide process, provided the usual precautions are observed. It may be used for dyeing mixed fabrics of cotton and viscose, but the cotton comes up slightly bluer in shade.

INDANTHREN BRILLIANT PINK BBL, powder fine for dyeing, a homogeneous dyestuff which in fastness properties and shade is near the well-known INDANTHREN PINK B. In clearness and brightness, however, it surpasses the latter color. It is suitable for dyeing cotton, linen, and rayon. Owing to its notable fastness to light and atmospheric influences, this product is recommended for the production of dyeings for awnings, curtains, and hangings. It can be used for colored goods required to stand bleaching in the piece. Its fastness to washing is very good; but as its fastness to boiling and soda boiling is not entirely satisfactory, it is not recommended for wash styles. Cotton and viscose in mixed fabrics are dyed almost the same shade. The dyestuff is not suitable for real silk.

INDANTHREN GRAY BG, a homogeneous Indanthren dyestuff, available in paste and powder form, may be dyed on cotton, linen, and rayon. It gives a full, bluish gray, slightly greener in shade than the old 6B brand. INDANTHREN GRAY BG may be used for dyeing unweighted silk. Like the other INDANTHREN dyestuffs, it is recommended for wash styles, but not for upholstery cloths or hangings, etc. Dyeings with INDANTHREN GRAY BG possess very good fastness to light and chlorine, and very good to excellent fastness to washing and peroxide. The fastness to boiling soda is also very good; therefore the dyestuff may be used for colored woven goods to be bleached in the piece, provided the usual precautions are observed. As the product levels very well, it may be used for compound shades and owing to its very good solubility, is suitable for dyeing in machines. It is also adapted for production of print-on styles by the Potash-Rongalite steaming process without previous reduction on cotton, rayon, and mixed fabrics made of these two fibers. Dyeings may be discharged to a white with Rongalite CL without the goods having previously been treated with Leucotrope W.

INDANTHREN GRAY M paste, a homogeneous INDANTHREN dyestuff which gives a full, neutral gray on cotton, linen, and other vegetable fibers. On rayon the shade is more reddish, near INDANTHREN GRAY 3B. The very good to excellent fastness to light of the dyestuff makes it suitable for dyeing awnings, curtains, and hangings. Owing to its excellent fastness to washing and very good to excellent fastness to boiling, it is recommended for wash styles. It possesses excellent fastness to peroxide, very good fastness to chlorine, and very good to excellent fastness to boiling soda, so that it may be used for colored woven goods required to stand bleaching in the piece. INDANTHREN GRAY M is also of interest for dyeing unweighted silk. Like all other INDANTHREN dyestuffs, however, it is only recommended for wash styles, and not for upholstery cloth or hangings. The shade on silk is greener than on cotton.

FAST CORINTH LB BASE, a new fast color base which, in combination with most of the NAPHTOLS of the AS range, yields very fast reddish to bluish shades which are somewhat brighter than those obtained with FAST CORINTH SALT V conc. Most combinations have very good to excellent fastness to washing and chlorine, and good to very good fastness to light, the combinations with NAPHTOL AS-LT and AS-RL being the fastest. FAST CORINTH LB BASE is suitable for direct and discharge printing.



Photograph just made available of high-speed warper and creel developed by Sipp-Eastwood Corp., Paterson, N. J., and described in Oct. 31, 1931, issue of TEXTILE WORLD.

Questions... *and* Answers

Flax-Manufacturing Problems

Will the reader who submitted inquiry No. 7770 as published in our issue of Dec. 19, 1931, and which concerned a machine for separating the flax fiber from the straw, kindly submit his present address to this office?

Communications forwarded to his old address have been returned. We have further information to offer him.—*Editor.*

▼

Tendering of Silk Hose

Technical Editor:

We are enclosing a few full-fashioned stockings with large holes caused from some tendering of the stock. The two bad stockings had large, blotchy, brown marks in the fabric before they were dyed. You will notice that wherever the brown marks appear the fabric is very tender.

We are not entirely certain whether the brown stains are rust marks or are caused by some other condition, and shall appreciate your opinion. All silk employed in knitting is conditioned before using on the knitting machines. We use soap for conditioning the silk, and add 1 pint of formaldehyde to 50 gal. of water. (7747)

The information supplied with the samples submitted is not sufficient to warrant our making a definite statement concerning the tendering of the goods. The brown stains are rust marks or iron stains, and may have developed from allowing the wet hosiery to lie on a metal table or other iron surface. Again, it is quite possible that the tendering has been brought about by the reaction between formaldehyde solution and iron rust. While we know that formaldehyde is used for the purpose mentioned, and that the quantity employed is not necessarily dangerous, there is always a possibility of some careless operator using more formaldehyde than the amount specified.

The faded condition of the tipped heel, toe, and picot top of the samples indicates also that the hosiery has been stripped and redyed. Likewise the stockings give the appearance of having been chemically delustered. Some of the strippers being used will carbonize silk if the concentrated powder comes in direct contact with goods before it is thoroughly dissolved in water. The same thing applies to some of the delustering agents. Therefore, it will be well for you to check carefully the different operations employed in dyeing and finishing your hosiery; and if such chemicals as we have referred to are being employed, see that instructions for their use are followed. If stripping or delustering agents in powder form are being used, make certain that they are put into a dilute solution before they are brought in contact with silk hose.

It is apparent that the tender spots are the result of a chemical attack of some kind; and we feel quite sure that a careful check-up along the lines suggested will eliminate the trouble.

▼

Worsted Fabric Changes Shade After Sponging

Technical Editor:

We are enclosing a few swatches of piece goods. The pieces from which these swatches were cut were examined by us and passed as perfect. After steam sponging, the pieces changed shade in the manner shown by the samples. We shall appreciate it if you will examine these swatches and give us your opinion as to the cause of the changes in shade. (7756)

We assume that these samples were dyed with chrome colors. In that event, it seems quite probable that in order to attain the required depth of shade they were topped with an acid dye. The latter, when subjected to steam, tends to lose its depth or fullness, leaving a "thin color," as dyers or finishers term it. This method of bringing the goods up to shade is not uncommon in dyeing establishments, as an acid color will feed on without much effort and makes it unnecessary to start a fresh bath. It must be remembered, however, that the top color will not be very fast to steam, soap, or light. In this case the change in shade is so slight that it should offer no great objection.

▼

Warp Streaks in Silk Fabric

Technical Editor:

We are enclosing a piece of brown silk showing warp streaks when held up to the light. What in your opinion is the cause of these streaks? Can they be due to the soaking oil used on the warp stock? (7763)

We are quite certain that the streaky effect appearing in this sample was not caused by the soaking operations, as the defect still shows after the fabric has been reprocessed.

We find also in examining the raw stock that there is a slight variation in dernier size where the streaks appear. This difference is so slight, however, that it would not entirely account for the streaks in sample.

The trouble seems to be caused by a strained reed. The best thing to do in a case of this kind is to replace the reed. Sometimes a reed appears to be perfect when the loom is not running; but when the loom is in operation, there is a shifting of reed wires.

▼

Finishing of Plaids

Technical Editor:

In making certain all-wool fabrics, we sometimes have considerable trouble because one side of the material finishes longer than the other side. In other words, one side seems to stretch more than the other. This causes difficulty for the cutters in matching up the pattern.

The defect is probably caused in the fulling mill or washer, or both; and we should like to have your opinion as to how this can be avoided, so that the pieces measuring about 60 yd. will be the same length on one selvage as on the other. A sample of the fabric is enclosed. (7743)

The fact that one side of the fabric finishes longer than the other is due to nothing more than a physical cause that should he overcome with a little care. Since this trouble prevails only in plaids and not in plain or striped designs, it seems quite certain that you are neglecting to pay sufficient attention to the fabric while in the finishing processes.

It is generally accepted that the operatives in the finishing room, while taking care that the plaids or designs must be kept as straight as possible, will endeavor to hold back one side of the fabric. This same tendency is noticed throughout the entire processing, so that by the time the piece has been through all the necessary routine to secure the finish desired, one side will have been stretched considerably. The only solu-

tion we can offer is to caution the operators to lift or help along the side that lags, rather than hang onto or hold back the side that leads during the finishing of this design.

Some help can be given to the cutters if the goods are folded plaid to plaid instead of just selvage to selvage. Match the plaid exactly and roll up by hand instead of by machine, and much of your trouble will end.

▼

Streaks in Canton Crepe

Technical Editor:

We are enclosing a small sample of Canton crepe. You will notice that there are a number of streaky and shiny ends. Will you let us know what in your opinion causes these? (7757)

The sample submitted shows that no blame can be placed on the grade of silk, but that the trouble lies in the supervision of the warp when placed on the loom. Inspection of all warps at the start will help to eliminate the streaks. For instance, 12½ in. in from one end there is a cramped dent, which should have been noticed on the loom. This cramped dent, having three double ends going on the same lift, could have utilized three heddles of two ends each, or the six singles could have been entered into the one heddle. The other streaks are due mostly to single ends and to ends rubbed by the reed.

To overcome these defects, the harness must be inspected, and all single ends and single-end wrong draws corrected. The reed must be free to move from side to side; otherwise the dents are strained and will leave open marks in the cloth, as shown in the sample. Chafing of the ends by the reed produces a dull effect on the ends after finishing.

▼

Varying the Common Twill

Technical Editor:

I have read with much interest and some uncertainty the article by R. A. C. Scott entitled "Attractive Weave and Color Effects Secured by Varying the Common Twill," which appeared in the issue of Nov. 14.

Although I am a designer of many years' experience, I must confess that the last section of this discussion, headed "Building from Motives," is not clear to me. I fail to see how the author derives either the design or the plan and draft from the motive. Moreover, it seems almost certain that Fig. 23 was not drafted from Fig. 22. Apparently Fig. 27 is the design from motive 22. I understand perfectly how chain-draft 24 and drawing-in draft 25 would be made from design 27, but I do not see either how design 27 could be developed from motive 22 or how plan 24 is related to Fig. 22.

I shall appreciate detailed information on this problem. (7785)

You are correct in surmising that Figs. 23 and 27 were erroneously transposed. We deeply regret this mistake. Your letter has been submitted to Mr. Scott, who offers the following comments:

"In response to the request for detailed information in connection with the construction of design, plan, and draft direct from motive, I have pleasure in appending herewith my further comments and diagrams. As already explained, each mark and blank in the motive represents four threads and four picks; consequently it requires 32 ends and picks for one repeat of design. By way of making this clearer, the two-and-two ends in design (which correspond to threads 1 and 3 in left twill (1) and right twill (2) respectively) are shaded and incidentally illustrate the groundwork of the design. In this manner we have actually completed half the design and eliminated any further use of ends 1 and 3 in the left and right twills, (1) and (2). By inserting the remaining threads, 2 and 4 of these twills, Figs. 1a and 2a, on the even threads in accordance with the order of motive, the full design is completed.

"To clarify this further, the design has been marked off in squares of four ends and picks, each square representing a mark or blank in motive. Let us take the first square in motive, reading upward, and apply this order of construction to design. The first four ends and picks require left twill; therefore we use Fig. 1a. The next three squares call for right twill, for which Fig. 2a is used—three squares of left twill, Fig. 1a, and one square of right twill, Fig. 2a. In like manner, the second four ends and picks call for one square of right twill, one square of left, two squares of right, two squares of left, one square of right, and one square of left, and so on. If the reader follows the distinguishing marks used in motive and in design, he cannot fail to grasp the system underlying this method of construction.

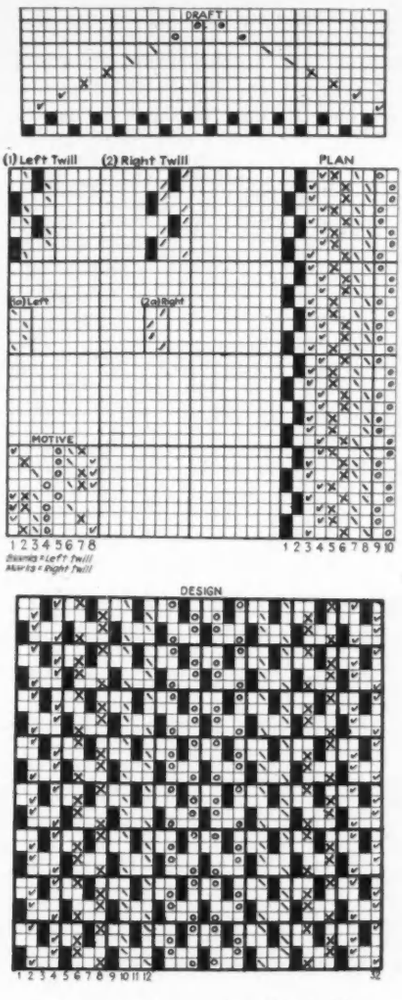
"In constructing the plan direct from motive, use again is made of Figs. 1a and 2a. The first two threads, which are the two-and-two ends as shaded, are first inserted, and are in reality equivalent to half the number of ends in design. Therefore each square in motive has automatically been reduced to two threads, which will indicate twill direction.

"Consequently threads 3 and 4 in plan correspond to 1 in motive; threads 5 and 6 in plan, to 2 in motive; threads 7 and 8 in plan, to 3 in motive; and threads 9 and 10 in plan, to 4 in motive. Then as 5, 6, 7, and 8 in motive are opposite to 4, 3, 2, and 1, respectively, reversing the draft takes care of the remaining threads. By dividing the plan by picks of four, little difficulty should be experienced in following this method of plan construction. Distinguishing marks are used throughout to correspond to motive.

"The draft construction is of the "skip-shaft" order, and is very simple. The two-and-two ends are placed on the front two harnesses as shaded, which represent 1, 3, 5, 7, etc., threads; in other words, half the threads in design. Then the following is true:

Threads	Representation in Motive
2 and 4	1
6 and 8	2
10 and 12	3
14 and 16	4
18 and 20	5 (reverse of 4)
22 and 24	6 (reverse of 3)
26 and 28	7 (reverse of 2)
30 and 32	8 (reverse of 1)

"As in the cases of the design and plan, distinguishing marks have been used in illustrating the construction of draft, and with the foregoing explanations it is hoped that the methods herein explained are now fully understood."



Method of varying the twill

Inquiries should give the fullest information possible; and if damaged material is involved, a sample should be sent. We give no consideration to anonymous inquiries and do not undertake routine analysis of yarn or fabric, or investigation involving unusual expense.

NATURAL BLEACHED COLORED—AND MERCERIZED YARNS

•

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LOS ANGELES

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CHESTER, PA. **BELMONT, N. C.**

ABERFOYLE MANUFACTURING CO.

Representatives in all the principal countries of the world

Survey of Fabric, Knit Goods, Yarn and Raw Material Markets

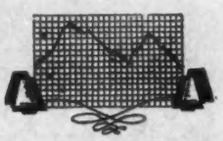
TEXTILE WORLD ANALYST

Irregular Stability Is Best That Can Be Foreseen for Wool

By Dr. L. H. Haney

SUMMARY

Early 1932 is likely to be a period of subnormal activity in wool goods manufacture to complete the downward phase of the two-year cycle in which the market runs and which turned downward last summer. Until consumption increases, the best that may be hoped for is irregular stability of wool prices.



IT does not seem likely that 1932 will bring any such increase in wool mill activity or consumption as occurred in the first half of 1931. The 1931 expansion was probably the result of prolonged hand-to-mouth buying of goods, followed by a covering movement on the part of distributors, and did not reflect an increase in consumer purchasing power. Now we have the excess production of 1931 to dispose of, instead of a shortage to fill. The early part of 1932 is likely to be a period of subnormal activity completing the downward phase of the two-year textile cycle which began last summer. Meanwhile, raw wool prices will remain depressed until a better idea is to be had of the size of the new clip.

Favorable Factors

1. The sheep population of several countries has probably been reduced.
2. Foreign raw wool prices are above parity with similar domestic grades.
3. World consumption of raw wool during 1931 has been well in excess of last year; consumption by domestic mills for the calendar year of 1931 was probably larger than in 1930.
4. Stocks of raw wool in the United States are not excessive; half and three-eights blood wools are in limited supply; mill stocks are believed to be moderate.
5. Imports of raw wool have been moderate; receipts of domestic wool in the United States have declined, and estimated total receipts of raw wool are low compared with mill consumption.
6. Worsted spindle activity increased in November.
7. The replacement margin of the average spinner improved in November and December.
8. Men's and boys' clothing cut in October showed a gain over last year.
9. The current replacement margin of the average manufacturer of wool textiles increased in November.
10. The outlook for woolen suitings has improved.
11. Mill stocks of merchandise are reported to be small.

Unfavorable Factors

1. The London auctions closed with prices below the opening (on a dollar basis), and also below the close of the last series in October. Concessions were made to move stocks.
2. Bradford activity has slackened; the price of tops declined following the weakness at London.
3. South Africa finds difficulty in selling its record clip on a gold basis.
4. The Buenos Aires auctions brought easier prices.
5. Domestic wool machinery activity declined in November to a new low since January, 1921. Consumption also declined.
6. Top prices have declined in the United States.
7. Yarn markets are dull and prices irregular.
8. Woolen and worsted goods prices continue to decline; concessions are being made on new lightweight goods. Spring business is late.
9. Retailers have cut prices in an effort to move heavyweight goods.
10. The situation in connection with credits and collections has grown worse.
11. Weakness in general commodity prices; continued business recession; further restriction of purchasing power.
12. Raw wool prices are high compared with prices of cotton and silk.

Further curtailment of domestic activity in the United States, and a relapse in the activity at Bradford, have modified estimates of probable wool consumption. The weakness of raw wool prices in foreign markets will tend to depress domestic wool prices, even though the latter are below parity with foreign markets. Conditions in the goods market are unsatisfactory, especially among retailers. Wool prices would probably have declined further if stocks were not so strongly held. Until consumption increases, the best that may be hoped for is irregular stability of wool prices.

Statistical Position

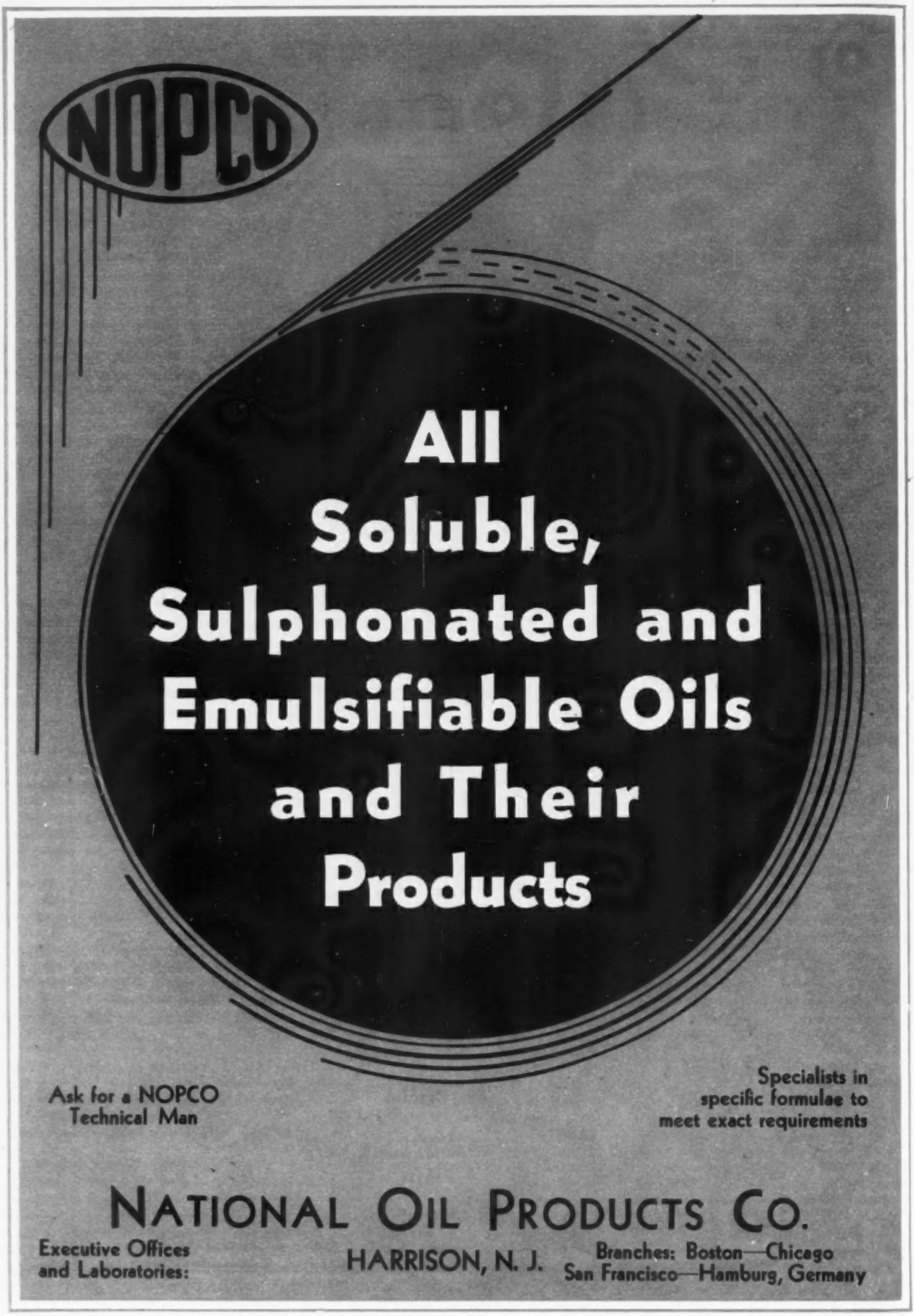
The domestic raw wool markets continued to decline during December, but trading was dull and price movements were somewhat narrower. The TEXTILE WORLD index of raw wool prices in December was approximately 49.0% of the average for 1921-28, against 49.6% in November, and 62.5% a year ago. Although this latest decline was small, and may indicate the approach of some temporary stability in raw wool prices, the index for December represented a new post-war low.

The trend of raw wool consumption by domestic mills has been downward since July, and mills are not buying beyond immediate requirements. With supplies throughout the world adequate, this decline in the apparent demand for raw wool has been followed by declining raw wool prices.

Stocks of raw wool in the United States are believed to be less than last year, though no figures exist by which to prove that this is so. We can estimate, however, that the total receipts of raw wool in the United States have fallen off relatively more than consumption, and from this relationship we deduce that stocks of raw wool in this country are declining. Dealers are inclined to be firm in their asking prices, as they believe that stocks are strongly held.

There is no sign of any substantial increase in raw wool imports, probably because consumption requirements are expected to remain small and domestic supplies are considered adequate, even though fine wools may have to be used

The analysis and forecast by Dr. Lewis H. Haney, Director, New York University, Business Research Bureau, which regularly appears on this page, considers various branches of the textile industry from week to week. The conclusions reached in the Analyst are mostly forecasts and generally apply to a time two or three months ahead. The analyst is based on statistical data and does not reflect temporary trade sentiment.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to make up for the restricted supply of three-eighths and half blood wools. Such a substitution seems to be rather probable, as foreign wools remain above parity with similar domestic grades. The recent decline in raw wool prices at London (dollar basis), and the quieting down of activity at Bradford will tend to keep prices easy in this country, however, and it will take a good gain in domestic mill consumption to bring any strength beyond temporary stability.

Yarn Position

The Textile World index of worsted sales yarn prices has been unchanged since last summer. Meanwhile, trade reports have indicated a number of concessions in the yarn markets, and these suggest that the apparently firm quotations in index of sales yarn prices are really nominal. Should a test come in the form of a larger volume of business, concessions would most likely be granted. Raw wool and top prices have been declining for several months and yarn prices appear to be out of line. The index was 62.6% of the average for 1921-28 during December, and compares with 75.9% a year ago.

The current replacement margin of the average spinner has apparently improved slightly, as a result of the relatively larger decline in raw wool prices as compared with yarn prices. A moderate improvement in the spinners' margin was to have been expected in view of the fact that the reduction in spindle activity has been more drastic than the curtailment of loom activity, after the peak of activity was passed last summer. But raw wool prices are showing signs of stability, and if yarn price concessions occur, as we expect, the replacement margin of the spinners will probably show some impairment. The tendency for spindle and loom activity to get out of balance again in November increases this probability.

Cloth Margin Improved

The woolen and worsted goods price index of the Bureau of Labor Statistics declined again in November to 71.0% of the average for 1921-28. This compared with 71.5% in October and 82.1% a year ago. The rate of decrease was less than in the two preceding months, and altogether the price movements of the last few months closely resemble the changes in prices in the fall of 1930.

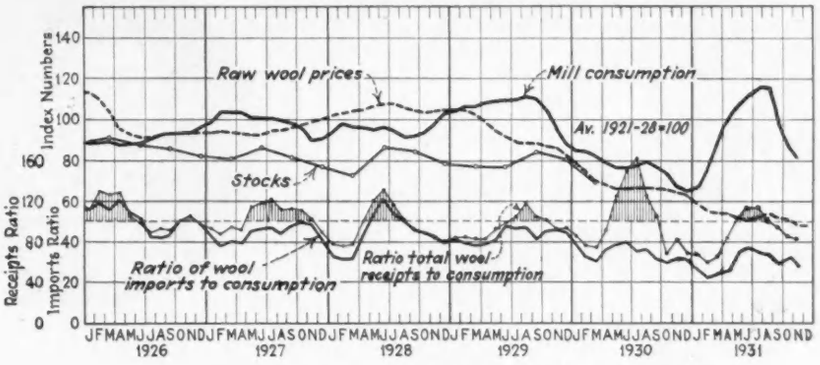

Fig. 1. RAW WOOL BAROMETER:

Price — Textile World Index; Mill Consumption—Grease equivalent, average daily adjusted for seasonal variation, three-month moving average; Stocks—U. S. Total, grease equivalent, end of quarter, adjusted for seasonal variation. Ratio of Total Raw Wool Receipts in the U. S. to Mill Consumption—Receipts not reduced to grease equivalent, adjusted for seasonal variation. Consumption as above, three-month moving average. Average for 1921-1928 = 100 for all four indexes. Ratio of Raw Wool Imports to Mill Consumption—Imports not reduced to grease equivalent, adjusted for seasonal variation. Consumption as above, Average 1921-1928 = 50, three-month moving average.

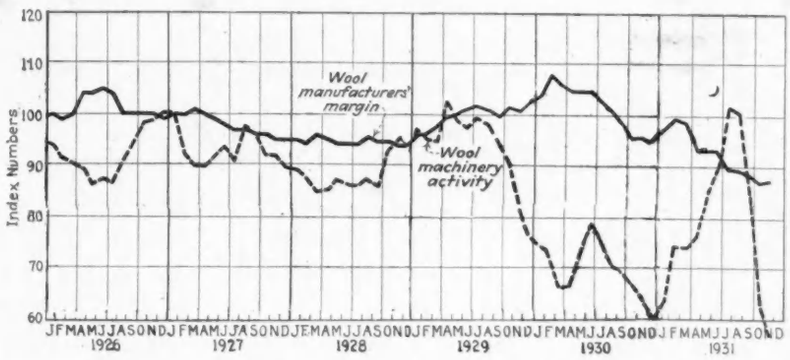

Fig. 2. WOOL MANUFACTURERS' MARGINS AND ACTIVITY:

Wool Manufacturers' Margins—Average of replacement margins; Wool Machinery Activity—Composite of loom and spindle activity, adjusted for seasonal variation; Average 1923-1927 = 100 for both indexes.

Raw wool prices suffered a sharper decline than cloth prices during November, and the spread between them increased. This means that the estimated current replacement margin of the average manufacturer improved for the first time since February. Curtailment of output, as reflected in the decline in our composite index of machinery activity, rather than improved demand, is probably the reason why the replacement margin increased. As yet there is no adequate basis for predicting expanding activity at a better margin of profit, as continued curtailment of operations is necessary before a normal margin is obtained. The tendency of raw wool prices to firm, and the reports of further concessions on wool goods, do not indicate any rapid or sustained improvement in the replacement margin.

Demand conditions in the goods market are unsatisfactory. Retailers are trying to move their fall goods at sacrifice prices, and spring buying has been further postponed. Lower prices are being quoted by manufacturers for lightweight goods. Stability of wool goods prices, therefore, does not appear to be probable in the near future.

Market Briefs

Cotton: *Easier on Monday but recovered later in week.*

Cotton Yarns: *Readjustment period with lower figures gaining acceptance.*

Cotton Goods: *Buyers show interest in only few lines.*

Wool: *Steady but with scant orders.*

Worsted Yarns: *Buyers still neglect market but sellers are hopeful.*

Woolen Goods: *Active spot call for worsteds.*

Silk: *Raw silk steadier; little buying.*

Silk Yarns: *Thrown and spun silk both quiet.*

Silk Goods: *Mills resist price pressure.*

Rayon: *Spirited buying through first week of 1932.*

Knit Goods: *Mesh hosiery retailing at $1.35 to $2.00 is promising spring line; spring underwear selling ahead; good February call for sweaters.*

CHANGING, EVER CHANGING

Irresistible as the tides are the changes that are constantly occurring all about us, in life's every activity—in every industry. To be a part of, to anticipate, to understand those changes, is to be alive, progressive. "The only certain thing is change."

How true that has been in the textile industry! Time deals ruthlessly with all who resist change. So, as another year comes up over the horizon, we greet it with pleasurable anticipation as we contemplate the new experiences, the new friends and the new contacts with old friends, that will be ours in this great year of 1932, our thirty-first year of service to the textile industry.

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YARNS AND RAW MATERIALS

TEXTILE WORLD ANALYST

◆Cotton Yarns in Adjustment Period

LITTLE new business is reported so far in the new year on cotton yarns. Inquiry is noted principally to check on prices, so that there are indications of an undercurrent of interest beneath the surface which might well make itself felt under normal conditions. However there is hardly enough business being done to establish prices, nor to give any more firmness to prevailing quotations. While spinners have not shown any tendency to make any drastic concessions, there is evidence that more spinners are meeting some of the prevailing prices. This of course means relinquishment of their former position of holding prices at which they were not booking any business.

Inventories are held up at the main object of attention at this time, so that manufacturers have had little chance to turn their minds to any new operations in yarns. There are, however, some indications of interest on the part of yarn users. One of these is the sampling by dress goods manufacturers of cotton yarns for new lines. The yarns involved are not only 30s-2 warps, but also coarse yarns in ratine effects.

Yarn men say if the wire trade would issue specifications against yarn orders, it would produce a volume of business which would have a stimulating effect upon the market generally. Prices generally present a varied appearance. With most spinners asking 15½ to 16c. for 20s-2 warps, sales are reported as low as 15c. or less; asking 19 to 20c. for 30s-2 warps, sales at 18½c. up, with a good plush yarn sold at 19c. and some sellers refusing 19c.

Carded knitting yarns also have been quiet. Two sales aggregating 100,000 lb. each, are reported as made within the last two weeks in underwear yarns, one for prompt delivery and the other for later shipments. The price basis for this business is understood to have been below 13c. Nevertheless it is difficult to find spinners who will accept less than 13c. Specifications on heavyweight underwear yarns lately have been slow, and inquiries few.

Combed and mercerized yarns as yet have failed to show any activity in northern centers. Prices are rather erratic and some new low levels are to be noted on both single and ply in an effort to adjust prices to buyer's ideas and secure orders. Mercerized new business is also slow.

Southern Spinners More Active

Increasing activity was reported in southern yarn centers this week. Shipments of combed yarns from the Gaston County area were in greater volume and indications were that consuming mills were experiencing more activity and in many cases in urgent need of yarns. Combed yarn prices were firmer and spinners who had raised their ideas of price somewhat found less resistance on the part of the purchaser. The 60s-2 combed qualities were quoted at 40½ to 42c. for soft twist yarns and 42 to 43c. for hard twists. Mills generally were running on schedules more nearly approaching full daytime operation in the Gastonia area.

◆Cotton Steady; Offerings Light

THE cotton market has shown continued steadiness of undertone during the last week. An accumulation of hedge selling orders from the South over the New Year holidays caused a decline of about 20 points in the market here on Monday, but offerings were absorbed by trade buying or covering. The southern hedging tapered off as soon as Monday's selling had been taken, and prices rallied later in the week when traders seemed to find some encouragement in the action of the stock market and considerable attention was attracted by the development of a firmer tone in Bremen which appeared to be coupled with rather a more optimistic view as to financial conditions abroad. March contracts which had sold off to 6.21 on the early week decline, recovered to about the trading levels prevailing at the end of the old year, with the market evidently impressed by the continuance of the southern holding movement, and the fact that so little cotton, comparatively speaking, came out in advance of the holidays.

The movement of cotton in the South has probably been retarded to some extent by recent unfavorable weather which has lowered the grade of cotton remaining in the fields, and which some in the trade think may have caused some loss in quantity. In a general way, however, there has been no change of importance in ideas placing the probable ginnings for the season at about 16,500,000 running bales, but whatever the magnitude of supplies, there has been little selling pressure against the market owing to the holding movement. The lower grade cotton showing up in current receipts is evidently finding a ready demand from coarse goods or coarse yarn mills, and there appears to have been a considerable demand toward the end of the old year for the filling-out of December engagements. Many are now looking forward to the advent of the new crop planting season for a further test of the holding movement, and it

(Continued on page 55)

◆Worsted Yarns Find Encouragement

THERE has been little opportunity for any development of activity as yet in the new year. Yarn men say manufacturers are still too busy on inventory details to think much about additional yarn orders. Conditions are favorable for developments before long because of lack of accumulation of yarns or goods. Spinners have been curtailing when there were not enough orders to maintain their mills in full operation, while manufacturers have not been taking in any more yarns than they needed. It has been reported exceedingly difficult to secure specifications against orders for men's wear yarns. However, despite that fact, more than one spinner reports satisfactory plant operation, although this is hardly general. French spinners, as a whole, are in the better position in this respect.

Reports are current of some further concessions from certain spinners who either are too anxious for business to consider profits, or else are fortunate in having some cheap lots of wool. Spinners state the present firmness in wools makes it impossible for them to replace some of their present stocks at anything like previous prices. It is a question whether the trade can reasonably meet some of the quotations reported to them. If they do, it is likely to throw out their whole schedule of prices and thus confront them with the problem of a complete readjustment. On the other hand, if he accepts the business at the lower price, he often finds only a small lot taken, and the buyer uses this purchase to chisel another concession elsewhere. A manufacturer recently offered a price for a yarn which was rejected by the spinner as 2½c. below his price. Later, the buyer told the salesman he had been able to place the order at his own price, as he said, "someone was foolish enough to take it." This indicates the attitude of the buyer toward the seller who shows a lack of firmness. It also suggests the possibilities of a united firm front on the part of spinners.

Reports of early business in swim suits are encouraging. Orders so far are reported in excess of the orders of last year from the same buyers. Sweater business is also reported in a favorable position. Yarn prices average about unchanged levels, with 2-20s Bradford 50s at around 75c., and single 18s slub-dyed 50s at 90c.

A good movement in piece goods in men's wear circles was reported as the year closed. While this has not yet had any effect on yarns for this trade, it is expected it will soon cause more interest. Since the use of colors and

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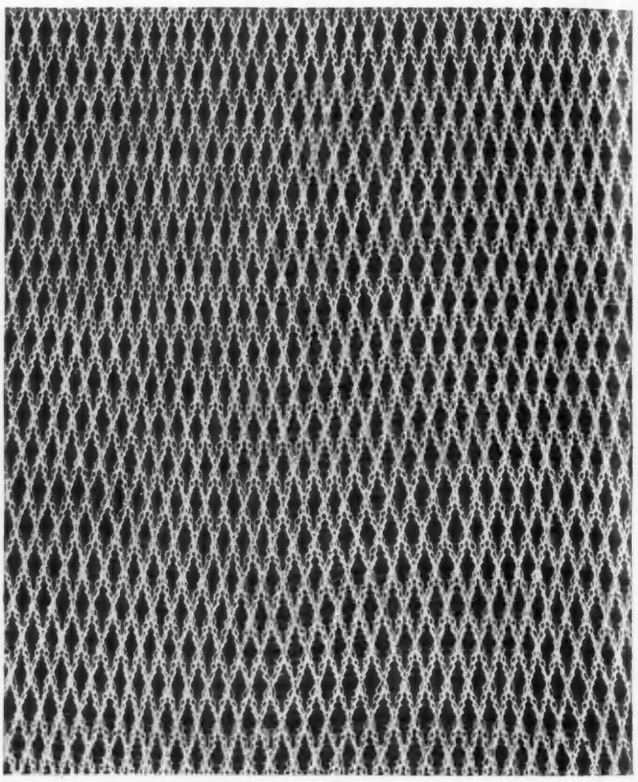

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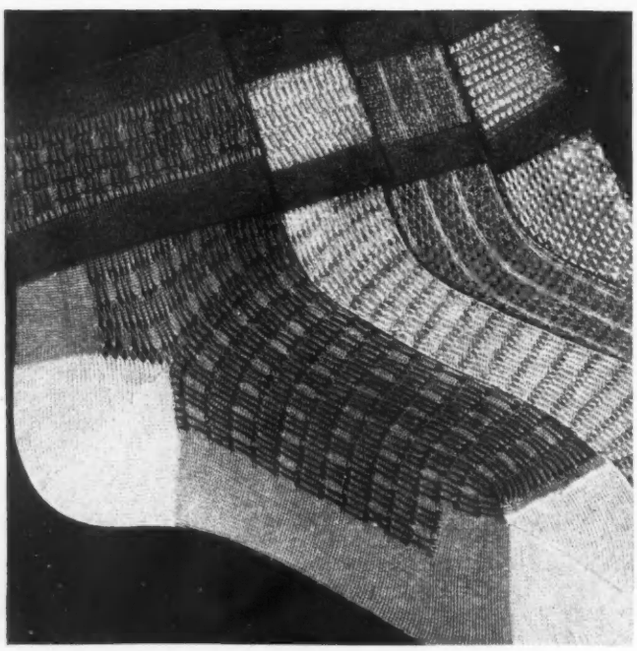

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YARNS AND RAW MATERIALS

TEXTILE WORLD ANALYST

mixes is so extensive, the difficulty of last year in securing such yarns on time, may now cause buyers to show earlier interest in specifications and orders. Prices are about the same as last week with 2-30s, 64s quality, in mixes quoted around $1.32½.

◆Wool Prices Stabilized in 1931

THE situation in raw wool at the opening of 1932 is said to warrant the trade in holding firmly to current values on the expectation that small stocks in the mills, depleted supplies of particular grades in the market and a much smaller general supply than a year ago will exert a normal influence in further establishing wool on its current steady basis. Wool values have been the process of stabilization for the last nine months. Demand for wool and its passage into consumption were exceptionally good during a year of general depression unparalleled in the recent history of the United States.

Unsettled conditions in the goods market are creating some hesitation, but the decline in wool prices during 1931 is now regarded by dealers as the finale of the major fall in wool values which has been practically constant over the last four years.

Graded territory wool has been dormant during the week and the call for original bag wool has also been in small volume. Recent demand for the three-eighths blood grade in fleece and territory has been exceptionally good so that at this time stocks are below normal. Larger demand for quarter-blood wool has been due largely to the knitting trade. Manufacturers are anticipating an exceptionally good knitting business after the first of the year and are willing to anticipate in part their requirements. Demand for Texas and California wools has been negligible though a little of the best northern California has sold at 47c. In recent weeks, however, the shorter woolen wools have moved in larger volume and there seems to be a better feeling regarding the future of woolen wools.

The usual western winter loans are being made at from 40 to 50c. per head, which loans are largely of the character of pre-consignment tie-ups. The independent trade handled a large quantity of the 1931 clip under the consignment basis. Outright buying has been less a factor in acquiring wool since the entrance of the national cooperative into the wool field. A much smaller clip for 1932 seems altogether likely, estimates ranging from 5 to 7% smaller grease poundage than 1931. A decrease of 5% would clip off 25,000,000 lb. from the 1931 total of about 367,000,000 lb.

◆Wool Substitutes Expect Better Year

DEALERS in noils, mill wastes and recovered stocks regard 1932 hopefully under the impression that prices have been so thoroughly deflated that the entire line of raw materials offered are real substitutes, from the price standpoint, for virgin wools in woolen manufacture. Prices are low and business restricted on the greater portion of the rags handled, but an exception is seen in white materials which are in relatively good demand and short supply.

The demand and supply situation in woolen wastes is now more favorable to the market on laps and threads and on this basis dealers will be less disposed to cut prices.

Stocks of good white waste are in sufficiently low compass to bring about a rising price trend on the appearance of a better volume of mill buying. The colored sorts are more of a problem.

The noil market opened the year quiet but firm. Demand has been picking up a little during the last few weeks, but 1931 as a whole was disappointing.

◆First Week of 1932 Finds Rayon Active

EACH day of the first week of 1932 has been bringing an increase in orders for rayon yarns and producers regard the outlook as very satisfactory. Both knitters and weavers show interest; they are buying a broad range of deniers, some for spot shipment and some for delivery through to the end of the month. Despite reports to the contrary, there is no evidence of uncertainty regarding prices. The possibility that the low silk levels might force a downward revision of synthetics is deprecated by producers who view the present differential as wide enough to keep rayon prices firm.

The steady buying by manufacturers would appear to confirm the producers' claim; mills are decidedly more confident with respect to rayon's levels than they were this time last year. Indeed, the position of rayon for several months has been better than was expected; December was unusually active, particularly at the crepe yarn end, and the first week of the year, normally very quiet, has been busy enough to promise well for the rest of the month. The attitude of rayon producers, as expressed by several executives, is that only a further drastic drop in silk or a protracted period of current silk levels —say six months—would cause weakness in synthetic yarn prices. At present, they view any price change as unlikely.

◆Yarn Mills Hope For Early Buying

THROWSTERS were watching the broadsilk openings this week with interest, relying on these events to stimulate movement of yarns within ten days. At present, only nominal business is being placed by the fabric houses, as they are waiting buyer reaction to their new offerings before proceeding on production of spring goods. Hosiery manufacturers took a brief flyer in thrown yarns just before the New Year and some fair-sized orders for trams were reported by throwsters; now, however, the knitters have slackened buying again and little activity is looked for at that end before the latter part of the month. Prices are unchanged.

Spinners are in similar position, except that they are slightly more confident. The holiday period brought business practically to a standstill, but spinning has been so light and carry-over stocks so small that market tone remains firm. Mills look for further demand from underwear knitters about the end of the month, and broadsilk manufacturers are expected to begin buying almost immediately; the spring broadsilks include a moderate range of spun silk fabrics and the weavers have little or no yarn stocks in hand for spring output.

◆Expect Raw Silk to Hold Current Levels

OPINION among raw silk importers leans increasingly to the belief that there will be no early change of any importance in primary market prices. Current demand from manufacturers is light and while next week may bring moderate improvement, sizeable buying is not expected before the latter part of the month. Reports from broadsilk houses indicate better movement of fabrics and with the stimulation of the new spring showings, the industry should soon find itself ready to cover for February-March production.

There is a tendency toward steadiness in raw silk prices though levels are a few cents below last week. Holiday interruptions and inventory-taking necessarily curtailed activity, and January has not yet advanced far enough to indicate trends for the first quarter. Yokohoma is somewhat stronger; the yen has steadied and importers believe it may hover around 35c. for some time. It would be unsound to look for any primary market revival strong enough to bring prices back to pre-November levels; available Japanese stocks are too large, and domestic demand prospects are too indefinite to support recovery.

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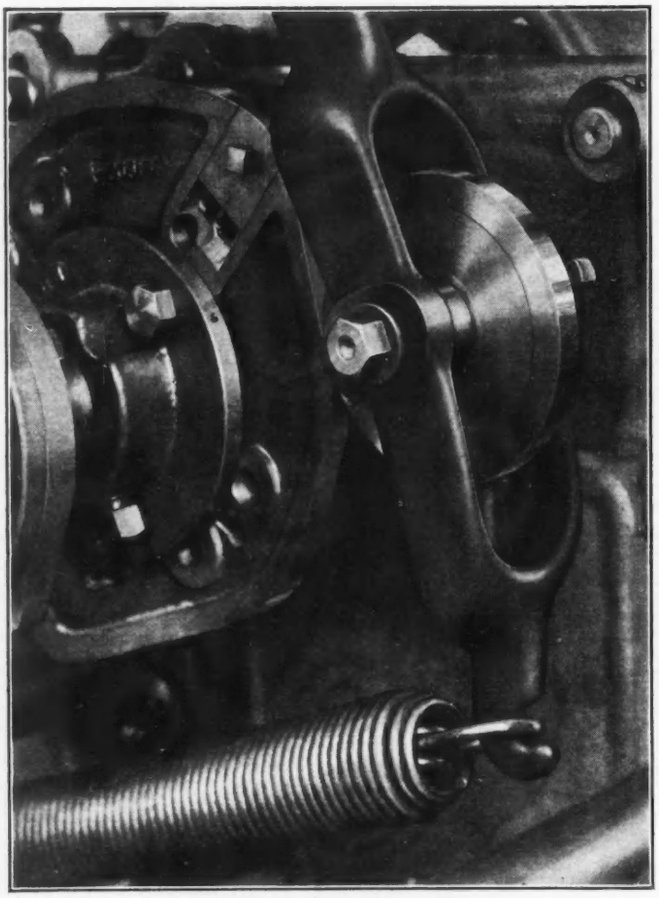

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FABRIC MARKET REPORTS

TEXTILE WORLD ANALYST

◆Cotton Goods Are Merely Marking Time

OUTSIDE of disappointment at the reactionary trends shown in the raw cotton market early in the current week, the situation which confronts cotton goods sellers is about what might have been expected and there is little new in it. Active business so early after the turn of the year is scarcely to be expected and no trading of consequence developed this week. There has been a selective market in progress with buyers showing interest in a certain limited group of fabrics. There is also an encouraging steadiness in quotations and cotton improved later in the week.

For example percale prices have been advanced from December lows and a few of the most sought after gray goods have been quoted up ⅛c. The whole position is a bit tentative, however, and its development depends upon the movement of business during the next few weeks. Buyers who have been scouting the market for odd lots of distress goods including discontinued patterns in colored goods, etc., have not found much of this sort of material, which suggests that stocks in first hands are in relatively clean condition. Buyers have been seeking such goods for the purpose of featuring them in special sales.

In only rare cases are there reports of burdensome stocks in primary cotton goods circles. In two fields there are said to be larger stocks than manufacturers would prefer. These are in duck and in wide sheetings. Business in various sorts of ducks was considerably restricted last year due to restriction of the automobile, building, shipping, and other consuming industries. Warnings have been heard for several weeks regarding excess production of wide sheetings, and it is hoped that curtailment now in effect will serve to correct the situation.

In the gray goods field there have been fair sales of 4-yard 80 squares and 4.10-yard 100x60s broadcloths. The price of the former firmed up to 5⅛c. for January delivery early this week. Quick deliveries in some quarters were held for 5¼c. For the broadcloth mentioned above, January deliveries have become scarce and such as were available were held for 5½c. February deliveries were held at 5⅜c. Print cloths generally were quiet, with 5.35-yard 64x60s selling in a small way at 3⅜c. and second hands reported to be letting out goods for 3⅞c.

One leading commission house reports that its December sales in yardage were 5% ahead of that month a year ago, and that its fourth quarter was 6% ahead of the similar period a year ago in yardage. Yardage for the entire year of 1931 sold by this house exceeds its prevous high record, that for 1929, by 1%, but of course the dollar value was considerably less because of the lower prices effective last year. This seems to support the argument that reduced prices would automatically lead to large consumption. Business has been moving and responsibility for the fact that it has been profitless or involved a loss, rests squarely on the shoulders of the cotton goods manufacturer himself. After the uncertainties which are now current are cleared up, business will probably move ahead again and the manufacturer will have another opportunity to show whether he knows enough about his reason for being to ask profitable figures for what he produces or not.

◆Wool Goods Mills Get Fill-In Orders

NUMEROUS rush orders of the fill-in type were received by manufacturers of men's worsted fabrics this week, and mills look for a gradual increase in activity through the month. Medium gray is favored, chiefly in conservative designs. There are predictions of an oxford season which are based on the buyer predeliction for these plain semi-staples. It is too early to forecast the fate of fancies in worsteds, but so far these fabrics have received only occasional attention among men's wear cutters.

One feature of the new year has been the tendency toward overnight buying by even the largest buyers. These latter firms, according to wool goods mills, insist on almost immediate turnover, and they often count the minutes in waiting for a shipment of goods from the mill. Competition among fabric houses is still keen enough to prevent real stability of prices, but the tone is steadier than last month. Certain important Fourth Avenue houses are making moderate profit on current levels, and are hopeful that prices will hold their present status at least until early February.

Men's wear cutters are not particularly confident regarding spring prospects, and the chances are they will buy piecemeal for the remainder of the month. Fabric mills look for a more encouraging attitude as the season advances.

Women's wear fabrics were quiet through the holiday period and the first week of the year brought only light demand, but market tone is better and some activity is expected within ten days. Stock carryover in both men's and women's goods from the old year was moderate.

◆$2.25 Silk to be Basis of Fabric Prices

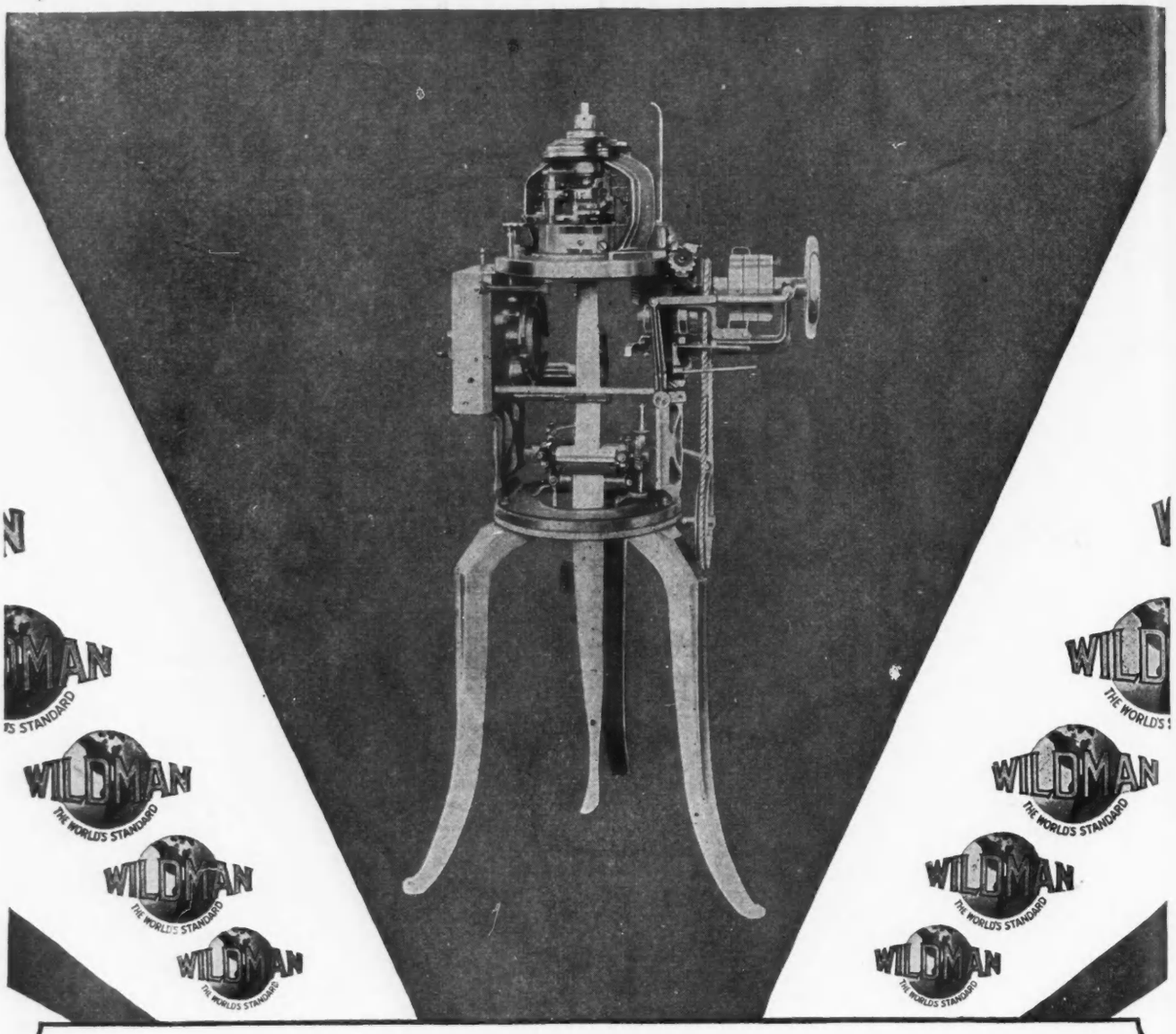
THE first week of the new year opened optimistically for the broadsilk industry, and the outlook for this division is better perhaps than it has been in several years. That does not apply to current sales; this is usually a quiet period and the market looks for a gradual pick-up in movement the latter part of the month, with a continued insistence on spot delivery. One significant development, however, was the determination of numerous foremost fabric houses to resist any downward pressure on prices which might be an aftermath of the raw silk break. Primary market levels have dropped 17 to 20% since Japan abandoned the gold standard, and fabric buyers already have begun to ask broadsilk mills for proportionate concessions, cheerfully forgetting the fact that current silk goods were made of silk purchased at substantially higher levels.

The broadsilk houses, it is understood, have decided to base their prices on $2.25 raw silk, which represents the average price in the primary market preceding the break; converters also are in the move, and will make a concerted effort to hold fabric prices that ratio. This, together with the curtailment policy already decided on by weavers, is expected materially to help the broadsilk market during spring. Mills expect prints to become increasingly important during the next few weeks, and they look for an active February.

▸Spain Bans Term "Artificial Silk"

Another name not to contain the word "silk" must be adopted by Spanish producers and distributors of synthetic textile fibers, according to a decree by the Ministry of National Economy, it is reported to the Department of Commerce by Commercial Attaché Charles A. Livengood. Jan. 15, has been designated as the last day on which recommendations for the new name may be submitted to the Director General of Agriculture, who then will draw up the measure for the official adoption of the new name.

By an order of June 30, 1928, synthetic textile fibers were given the name of "artificial silk." The purpose of this decree was to protect the silk industry of the country and to protect the consumer in his purchases of such products. The term "artificial silk" has not affected the desired results it is said, and in view of the national policy of stimulating the silk industry for the benefit of the farm population, the adoption of a new name has been ordered.



Many Rayon manufacturers consider the Wildman Machine the first essential to a *quality* product

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Norristown, Pa.

WILDMAN
THE WORLD'S STANDARD

WILDMAN
SPRING NEEDLE BODY MACHINE

KNIT GOODS MARKETS

TEXTILE WORLD ANALYST

◆Fair Holiday Call for Underwear

SOME of the larger mills received considerable underwear business just before and during the holidays; orders were for men's cotton lightweights for February delivery. All contracts were small but the buyers indicated that they would reorder toward the end of the month. Buying of underwear as a whole is very light, the tendency being to hold off until the middle of January. Market tone is somewhat better, and knitters look for a fairly good spring season.

Heavyweight underwear continues in demand, with orders drifting in here and there, and this situation may be maintained through the month. Retailers and jobbers have scarcely more than a few days' stock on hand and each spurt of cold weather brings a corresponding rise in spot orders. The date of the next season's underwear opening is still very uncertain; indeed, neither mills nor buyers show any real interest in the question. Assuming that the spot call for heavyweights carries through to the end of January, the openings will certainly be deferred as no mill wants to discourage any tendency to quick turnover these days; in any case the industry is resigned to a belated 1932 season on ribbed merchandise.

◆Spring Sweaters Selling Into February

SWEATER manufacturers entered 1932 in rather optimistic mood; the year-end brought a moderate amount of advance business on crickets, chiefly for February delivery, and the industry looks for further activity as soon as stock-taking is over. The sweater demand leans to novelty lines, mediumweight, and in pleasing color combinations. Subdued mixtures are popular. Just before Christmas there was what seemed to be a good flurry of orders for heavyweight sweaters, but demand waned quickly and knitters now regard the season as definitely over. Winterweight sweater mills fared poorly in 1931 but things might have been worse; total volume was well below 1930, the chief redeeming feature being that curtailment of production kept stocks down and held prices to a fairly profitable level.

Bathing-suit sales prospects continue difficult to interpret. Considerable business was placed through December, but buying was uneven and most of the call was accompanied by price pressure. Knitters complain that the recent reductions have created a general hesitancy among buyers; where orders are placed, the distributor invariably wants special concessions. Worth Street hopes that the worst has passed.

Factors claim and with reason that another substantial drop would eliminate profits for a good part of the trade. The key to the present situation would be to curtail production and operate on the assumption of a light season; it is clear that demand will be slow in developing and a last-minute pressure if such came would merely strengthen the position of the manufacturer, provided stocks were low. Current orders stress the ribbed suits; there is a falling-off in popularity of jerseys and some mills are cutting their output. Pastels continue important in women's suits.

◆Quality Mesh Hosiery Faces Good Season

HOSIERY sales prospects for January are better than hosiery price prospects, in the opinion of leading Worth Street factors interviewed this week. The first few days following the holidays were quiet, but agents noted a slightly better tone toward the latter part of the week, and they believe the middle of the month will bring some spirited buying. Mills specializing in quality full-fashioned hosiery are concentrating to an unusual degree on mesh hosiery output for the spring season.

It seems now as though the best mesh hosiery market would lie in the lines retailing at $1.35 to $2.00. Production of this merchandise is going to be well above the fall months in volume, but manufacturers are confident that demand will be strong enough to assimilate the stocks.

The real danger lies in the mass production of low-priced mesh hosiery which also is getting under way. Some mills, it is reported, are aiming to offer numbers which will retail slightly above $1.00. The prospects for sale of these lines are not too encouraging as the merchandise is likely to be of inferior workmanship and its faults will be more or less evident to the observant woman customer.

Prices on all lines of women's hosiery are uncertain at present and the indication is there will be stronger pressure by distributors before the month is out. However, mills seem more inclined to resist giving concessions than they were last month. There has been considerable curtailment of output during recent weeks and manufacturers may show a fairly strong front when spring buying starts.

There is a call for fancy half-hose, chiefly lines retailing at 25 and 35c., but the price situation has changed little; stocks are still well above demand.

◆Raw Cotton Report

(Continued from page 49)

seems that people who had carried cotton over the first of the year are hardly likely to sell freely on declining markets until more is known of the coming crop outlook and prospects for spring trade.

It is now considered extremely doubtful whether there will be any effective legislative control of the acreage. The bill passed by Texas limiting the acreage planted to 30% of the total area under cultivation was not contingent upon action by other States, but it has been understood that it would not be enforced should other States fail to join in the movement, while it is also reported that the constitutionality of the bill is to be tested. At the same time it is believed that prices are low enough to insure a voluntary reduction in acreage particularly in view of general economic conditions while there are few traders who think that next year's yield per acre can be expected to equal that shown by the present crop, in view of soil exhaustion and probability of increased weevil damage.

The somewhat better tone of the stock market seems to have encouraged rather a more optimistic view of the general outlook. Something, no doubt, is hoped for from the proposed reconstruction credit corporation, while the trade has recently been inclined to take rather a more cheerful view of financial conditions abroad based partly, perhaps, upon an idea that England and France will get together on some plan with reference to war debts and reparations. Fluctuations of sentiment in this respect, however, are to be anticipated and while favorable opinions of cotton as an investment proposition in the long run are heard in many quarters, there is an obvious disinclination to buy aggressively on advances for the time being.

◆Spinnable Wastes Most Active

THE first week of the new year witnessed no material change in the cotton waste situation. Spinnable materials moved in a small way at firm prices, but stuffing stocks and threads for machining remained inactive.

Spinners of fine count yarns are in the market for choice lots of Sak. strips and are willing to pay as high as 7½c. for this material despite the fact that they could purchase domestic cotton at a lower price. Since the present tariff on staple cotton went into effect imports of Egyptian cotton have been restricted, and the output of Egyptian wastes has fallen off proportionately. Peeler comber is firm at 5½ to 6c., while Sak. comber is in limited demand at 4¾-5c.

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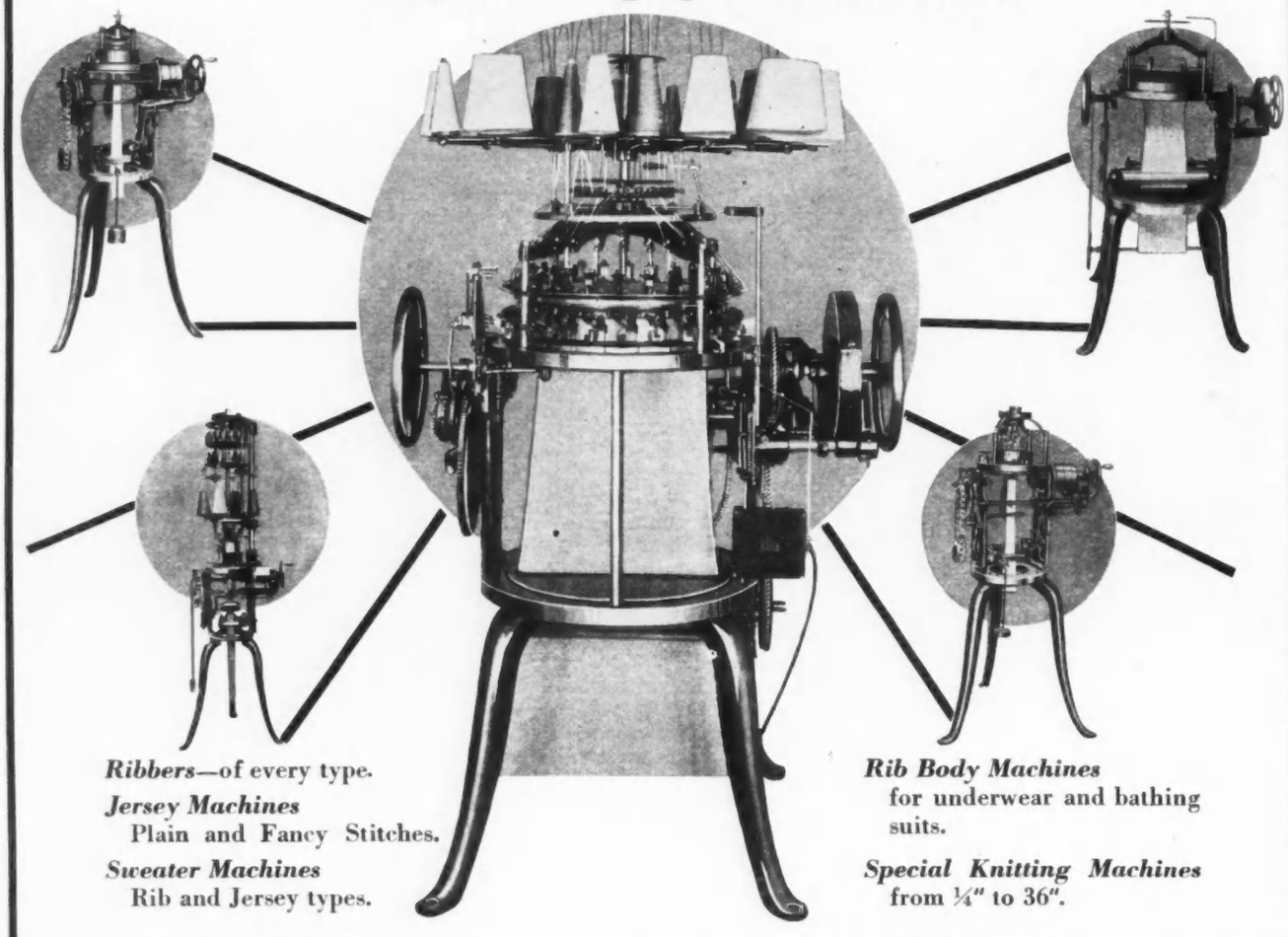

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(A)

TEXTILE FINANCIAL NEWS

TEXTILE WORLD ANALYST

◆ United Merchants Report Profit

FOR the seven months ended July 31, 1931, United Merchants & Manufacturers, Inc., earned after depreciation, inventory markdown and interest, $1,198,721, and according to a notice signed by Homer Loring, president, and Lawrence Marx, vice-president, this figure will approximate the earnings for the entire twelve months of 1931. The company's outstanding funded debt, which would have matured on Dec. 15, 1931, has been successfully refinanced, notes of the new issue maturing each year from Dec. 15, 1932 to Dec. 15, 1936. Current assets as of July 31, 1931 were reported at $17,411,847 and current liabilities at $8,863,674, the latter figure being exclusive of certain notes subsequently renewed.

Duplan Silk Profit

Duplan Silk Corp. and subsidiaries report for the six months ended Nov. 30, 1931 net profit of $142,733 after provision for federal taxes. This was more than sufficient to cover preferred dividends paid of $131,910 for the period, and compares with net profit of $270,304 in the corresponding six months of the previous year. On Nov. 30, 1931, the company had current assets of $4,508,401, or 7.8 times current liabilities of $578,023.

Gloversville May Cut Capital

Stockholders of the Gloversville (N. Y.) Knitting Co., Inc., will vote Jan. 16 on a proposal to cut the company's capitalization from $750,000 to $375,000. The stock at present consists of 7,500 shares of $100 par, and it is proposed to cut the par value to $50 per share.

Cleveland Worsted Dividend

The Cleveland (Ohio) Worsted Mills Co., has declared a dividend of 5c. a share on the capital stock, payable Jan. 1 to stock of record Dec. 31, 1931. This is the first dividend payment since 1924 and is being paid out of surplus.

Retires Preferred Stock

Notice has been filed in Albany, N. Y., of a change in capital structure of Commercial Factors Corp., by retirement of $2,000,000 of its $5,000,000 authorized and issued preferred stock. As the entire capital issued, both common and preferred, is owned by Commercial Investment Trust Corp., the operation is purely an inter-company matter. The capital and surplus of Commercial Factors Corp., after the above change will be in excess of $10,000,000.

Viking Hosiery Liquidation

Assets of the Viking Hosiery Mills, Inc., manufacturers of children's hosiery, with a plant at Reading, Pa., have been turned over to Thomas O. Scheckell, manager of the New York Credit Men's Adjustment Bureau, Inc., and William Walker Orr, secretary of the New York Credit Men's Association, as common law trustees to liquidate for the benefit of creditors, it was learned.

Unsecured liabilities total approximately $21,000, against assets having a book value of about $33,000. Officers of the corporation had offered a 30% settlement in cash to larger creditors forming a committee. This committee had accepted the settlement providing the accountant's report coincided with the debtors' statement of affairs.

When the accountant's report was ready, those who were to finance the settlement found it impossible to raise the 30% and the liquidation was decided upon in lieu thereof.

Financial Brevities

The Proximity Mfg. Co., Greensboro, N. C., paid to the employees in its four plants, White Oak, Revolution and Proximity Mills, and Proximity Print Works a total of about $20,000 in Christmas bonuses, varying in the individual case from $5 to $15.

Until the results of operations for year 1931 have been determined, directors of Penman's, Ltd., Montreal, Canada, have deferred the dividend on the common stock of the company. Dividend of 1½% on the preferred stock for the quarter ending Jan. 31, 1932, has been declared, payable Feb. 1 to shareholders of record Jan. 21.

British Dividend Record

The average dividend in 1931 of 225 Lancashire cotton spinning and manufacturing companies was 1.30% compared with 2.05% for the same companies in the previous year. The total paid-up ordinary share capital of the 225 companies is £32,528,405 and the total of machinery 22,725,233 spindles and 31,545 looms. In 194 cases no dividend was declared against 172 in 1930. Dividends absorbing £273,155, equal to 0.84% on the total capital mentioned above were paid by the remaining 31 companies. In 1930 dividends absorbing £461,218, equal to 1.25% on the total capital of £36,825,919 for 259 companies were paid.

The accounts of 140 companies show that during 1931 eight made profits totaling £22,607, and 132 losses of £1,157,977, an average loss of £8,110. In the previous year the profits of 18 companies were £130,455, and the losses of 122 totalled £942,771, an average loss of £5,802.

Further losses totaling £1,149,193 were made by the six biggest combines which together control 15,000,000 spindles and 37,000 looms and have a total paid-up share capital of £23,764,138. The profit and loss accounts for the 225 companies reveal that 62 have credit balances of £1,039,175 and 163 debit balances totaling £7,227,366.

Seventy-three companies called up additional share capital totaling £3,464,339 as compared with £3,714,120 for 81 companies in 1930.

Boston Stock Auctions

The following sales of textile shares were made at auction, Dec. 31:

Shares	Mill	Par	Price	Ch'ge
100	Nashua, com	100	3½	—4½
100	Arlington	100	18½	—4½
15	Lancaster, pfd	100	35 lot	....
63	Pepperell	100	30	—½
10	Hamilton Woolen	100	50	....
10	Holmes Mfg.			
7½	Waltham Bleach & Dye		100 lot	....
10	Waypoysett Mfg. pr. pfd	100	1	....
50	Great Falls	....	2 lot	....
428	United Elastic	....	8–8½	—?
50	N. E. So. pr. pfd	100	6 lot	....
242	West Boylston, com	....	75c.	....
180	West Point	100	35	....
18	Berkshire Cotton (undeposited)	100	115	....
800	Great Falls	....	15c.	....
34	Ludlow	....	60	....
33	Plymouth Cordage	100	52½–51	+3½
2,150½	Total			

▶ New England Textile Stocks

	Sale	Bid	Asked
Am. Mfg. Co., pfd	50	45	..
Amoskeag	3½	48	..
Arlington	18½	17	20
Associated Textile	10	...	10
Bates	60	..	25
Berkshire Associates, com	12½	½	1
Berkshire Associates, pfd	40½	8	12
Bigelow-Sanford, com	14	..	..
Boott Mills	120½	40	60
Edwards	80½	40	45
Farr Alpaca	27	14	18
Hamilton Woolen	50	50	55
Hill	7	2	5
Ludlow	60	58	62
Merrimack, com	3½	2½	5
Nashua, com	3¼	3	..
Nashua, pfd	29	14	18
Naumkeag	50	46	50
Newmarket	5	5	10
Otis	45	35	40
Pacific	8	..	..
Pepperell	30	29	31
Plymouth Cordage	51	47	50
York	8¼	4	..

▶ Textiles on N. Y. Exchanges

The following shows the movements of the leading textile stocks listed on the New York Stock Exchange and Curb for the week ended Jan. 5:

	High	Low	Last Sale	Net Ch'ge
Adams Millis,,	25½	24½	24½	—2
American Woolen	3½	2½	3½	....
American Woolen, pfd	16¼	15½	16	—1
Belding-Heminway	2½	2½	2½	+⅛
*Bleumenthal	4½	4½	4½	+⅛
Cannon Mills	17½	17	17	—1½
Collins & Aikman	7¼	7¼	7¼	—¼
Consolidated Textile	⅛	⅛	⅛	....
*Courtalds, Ltd	5¼	5¼	5¼	+⅛
Duplan Silk	10	10	10	....
Gotham Hosiery	8	7	7½	—½
Industrial Rayon	25	22¼	23¼	—2
Kayser, Julius	7½	7½	7½	—⅛
Kendall, pfd	28½	28½	28½	....
Mallison	¼	¼	¼	+⅛
*Mock Judson	4	4	4	+1
Mohawk Carpet	8½	8	8	—¼
Munsingwear	12	11	11½	....
Pacific Mills	8	8	8	—1
*Pepperell	31½	28	31½	+1½
*Propper-McCallum	1½	½	½	—1½
Real Silk Hosiery	2½	2	2½	—⅛
Tubiae	2	1½	2	—¼
United Piece Dye Works	11½	11¼	11½	—1¼

*Listed on Curb.

Master Mechanics to Meet at Boston Forum

Master mechanics in mills throughout New England and in New York State will meet Jan. 14 at the Boston Chamber of Commerce building. The session will be the third of the 1931-1932 series of the Textile Forum conducted under the auspices of the National Association of Cotton Manufacturers.

W. B. Parker and H. C. Doyle, both of the General Electric Co. will address the gathering, Mr. Parker on the subject of "Arc Welding" and Mr. Doyle on "Textile Mill Lighting." They will give 15 minute talks at the beginning of the discussions at the morning and afternoon sessions.

The program of the day will be given over to the consideration of various problems encountered in the maintenance of a textile plant on an efficient basis. The questions to be discussed will include: Should a regular inspection of mill machinery be made by the mechanical department with reference to alignment, levelling and mechanical running condition? Are individual drives to be preferred over four frame drives, considering power consumption, cost of installation, maintenance costs and productions obtained. When should power be purchased and when is it profitable to make your own power? The making of repair parts versus buying.

Textile Wage Reductions Reported

H. Arthur Newton, general superintendent of the Pacific Mills, Dover, N. H., states that a wage readjustment for the employees of the mills of the Cocheco division, became effective Monday. He also states that the plant will be operated on full time.

Windham Silk Co., Willimantic, Conn., has announced a wage reduction of 10% effective throughout the working force on Jan. 4.

Winship, Boit Co., Wakefield, Mass., announced recently a wage cut to go into effect sometime this month. The extent of the revision has not as yet been decided, but piece workers, it is said, will in no way be affected. The current action marks the first change in the wage scale at the Wakefield plant since the World War.

Bigelow Sanford Carpet Co., Clinton, Mass., resumed operations Jan. 4 after a 9-day shutdown and immediately put into effect wage reductions averaging 10%. All classes of employees are affected and the largest reduction is 15%. A full force of 800 will be employed.

France Cuts Hosiery Duty

American cotton stockings and socks were restored to intermediate rates of duty on importation into France by a decree published in the *French Journal Officiel* for Dec. 29, 1931, instead of the general (maximum) rates applied since April 30, 1931, according to a cablegram from Acting Commercial Attaché W. L. Finger, Paris. The new intermediate rates applying to imports of cotton hosiery from the United States are one-half higher than the minimum rates, corresponding to the status existing before April 30, 1931, while the general rates recently applied were four times the minimum rates.

Pacific Mills Hold Exhibit in New Office

Over 250 consumer, trade and industrial products made from Pacific Mills' fabrics are displayed in an exhibit which is the feature of the formal opening of the new Pacific Mills sales offices in the 40 Worth Street Building, New York, Jan. 4 to 11. These have been grouped in five individual displays of women's wear, men's wear, children's wear, household furnishings and industrial and miscellaneous products.

The largest and most comprehensive exhibit is that of women's wear, which includes almost every article of women's apparel, from hats, to shoes lined with Pacific shoe linings.

The household furnishings group illustrates the wide variety of Pacific products merchandised for this field, and ranges from high-quality upholstery fabrics to ironing board covers.

Exhibited in the men's wear display is a man's complete wardrobe, every item of which is made entirely of Pacific Mills' fabrics.

The children's wear group is a smaller edition of the men's and women's groups, with percale and wash goods the featured departments.

Among the industrial and miscellaneous products are displayed special coated cloths used for insulation purposes; specialized fabrics for buffing wheels; maids' and nurses' uniforms, a waiter's coat and a barber apron; a graduation cap and gown; and a collection of children's stuffed toys.

At the front of the showrooms is an exhibit of the various processes by which the raw materials are transformed into fabrics.

Finishing Activity for December

The National Association of Finishers of Textile Fabrics has issued its monthly statement of percentage of normal average capacity operated in the industry for the months of December and November as follows:

	1931 (4 Weeks)	December	1930 (4 Weeks)
White and dyed combined	42	46%–White 54%–Dyed	40	48%–White 52%–Dyed
Fast black	16		12	
Logwood &/or sulphur black	15		37	
Prints	56		59	

	1931 (4 Weeks)	November	1930 (5 Weeks)
White and dyed combined	44	45%–White 55%–Dyed	46	47%–White 53%–Dyed
Fast black	14		20	
Logwood & /or sulphur black	24		43	
Prints	60		55	

New Celanese Has Viscose Dyeing Properties

Advices from London state that progress is being made in the development by British Celanese Ltd. of a new type of Celanese yarn which will have the dyeing properties of viscose process yarn while retaining the characteristics of the cellulose acetate product. Preliminary announcement of this development was made recently in London by Dr. Henri Dreyfus, chairman of the company, who indicated that eventually the yarn would be placed on the market in Great Britain, Canada and the United States.

Japan May Export Hosiery Machinery to India

It is reported from Yokohama that the British India Industrial Development Association plans a hosiery industry in India and has offered to purchase knitting looms for hosiery from Japanese manufacturing concerns in Nagoya. Hosiery exported from Japan to British India for the first nine months of this year amounted to 1,455,000 dozens, valued at 2,650,000 yen.

Fukui, Japan, To Have Rayon Exchange

It is reported from Yokohama that the Japanese Ministry of Commerce and Industry has approved the request of Fukui merchants for the formation of a rayon exchange in that city. Applications from the Osaka Sampin Exchange and the Tokio Rice and Produce Exchange for permission to establish rayon exchanges have been held by the ministry for further consideration.

Earl W. Eddy Joins the Arthur Whittam Co.

Earl W. Eddy, for the last six or seven years with the J. B. Jamieson Co., on Jan. 1 became associated with the Arthur Whittam Co., 77 Summer Street, Boston, Mass., dealer in cotton yarns, and will represent it in the future in the New England territory.

O. H. Bieg Now With Walker Yarn

Oscar H. Bieg, formerly with Franklin D'Olier & Co., and for the last nine years with the Philadelphia office of Wm. Whitman Co., Inc., cotton yarn department, is now associated with the Walker Yarn Co., 308 Chestnut St., Philadelphia. He will cover Philadelphia and Pennsylvania State trade.

Gilkey Moves to New Office

Pyam L. Gilkey, cotton yarns, has removed his office from the Lafayette Building, Philadelphia, to a new location in Room 1230, Commercial Trust Building, Philadelphia.

▸ Underwear Trade Plans Mid-February Opening

Tentative plans for a mid-February opening of the 1932 ribbed underwear lines, were formed Thursday at a meeting of members of the Associated Knit Underwear Manufacturers of America, which was held in the Yale Club, New York City. Roy A. Cheney, executive secretary of the association, presided.

The underwear manufacturers expressed approval of a plan to guarantee prices of the new lines; details of this move were not made known. Prices of winter underwear for this year are expected to be about 10% below last year's opening levels, which would reflect the drop in the raw cotton market.

▸ Optimistic Reports from the South

Indications of improved demand for textile products were revealed this week in reports from North Carolina. A. A. Shuford, of Hickory, N. C., head of a large cordage and twine producing group of mills, stated that his organization made the largest shipment in more than a year last week. This shipment consisted of 20 carloads of twine and 102,000 lb. of other textile products. His mills now have unfilled orders amounting to 2,300,000 lb., it was stated.

Officials of Textiles, Inc., Gastonia, N. C., reported that 14 of their combed yarn mills operated for a full week, daylight only, ending Jan. 2. They predicted that other units in their organization would be placed on a full daytime schedule either this week or next. No night work is contemplated by executives of Textiles, Inc.

▸ Woolworth Buys $500,000 Worth of Cannon Towels

Cannon Mills announced on Jan. 6 that the Woolworth 5 & 10c. chain has placed with them contract for towels amounting to about $500,000. This is one of the largest contracts for towels ever placed.

▸ Boston Wool Receipts

Receipts of domestic and foreign wools at Boston, also imports at Philadelphia and New York for the week ended Jan. 2, based upon data compiled by Dept. of Agriculture, follow:

	Week Ended Jan. 2	Total to Date 1932	Total to Date 1931
Domestic	161,000	161,000	906,000
Foreign	246,000	246,000	1,045,000
Total	407,000	407,000	1,951,000
IMPORTS AT PRINCIPAL PORTS			
Boston	246,000	246,000	1,045,000
Philadelphia	353,000	353,000	594,000
New York	221,000	221,000	729,000
Total	820,000	820,000	2,368,000

Business News

Lowell and Banfield Elected Vice-presidents of Saco-Lowell Shops

At a meeting of the board of directors of Saco-Lowell Shops on Jan. 4, W. F. Lowell, general sales manager, and F. E. Banfield, Jr., agent of the Biddeford plant, were elected vice-presidents of the company.

Mr. Lowell will continue to be responsible for sales and advertising. Mr. Banfield, in addition to other duties and as a result of the consolidation of the Newton plant into Biddeford and Saco, will be responsible for all the engineering work of the company.

Lukens Steel Co. Founds Industrial Fellowship at Mellon Institute

Dr. Edward R. Weidlein, director, Mellon Institute of Industrial Research, Pittsburgh, Pa., has announced that the Lukens Steel Co., Coatesville, Pa., has established in the Institute an Industrial Fellowship whose purpose is the scientific investigation of processes employed in the manufacture of steel plates. Erle G. Hill, who received his professional education at the University of California, has been appointed to the incumbency of this Fellowship.

Babcock & Wilcox and Fuller Lehigh Consolidate

Babcock & Wilcox Co., New York, announces a further consolidation of the resources and facilities of the Babcock & Wilcox and the Fuller Lehigh organizations, effective Jan. 1. The sales offices of the two companies have been combined and all business heretofore carried on separately or jointly by these companies will be done in the name of the Babcock & Wilcox Co. through its district sales offices.

Henry H. Peck Joins Lukenweld, Inc., as Manager of Sales

Henry H. Peck, formerly with the Standard Steel Works Co., Burnham, Pa., has joined Lukenweld, Inc., Coatesville, Pa., as manager of sales. Mr. Peck succeeds John S. Bleecker, formerly in charge of sales for Lukenweld, Inc. Mr. Bleecker has been appointed manager of sales research and advertising for Lukens Steel Co. and its divisions, Lukenweld, Inc., and By-Products Steel Corp.

Union Special Sales Manager Views Future with Optimism

By following a definite program of product improvement the Union Special Machine Co., Chicago, manufacturer of industrial sewing machines, proved to its own satisfaction that business opportunities still exist and is able to report a 1931 sales record that is considerably in excess of any current industrial index. Despite the fact that they are operating on quotas established several years ago, several salesmen were able to turn in records of better than 100%.

In a message addressed to the Union Special sales organization last week, Travis S. Whitsel, sales manager, called attention to these facts and made the following explanation of the factors back of this record:

"Union Special produced more new style machines in 1931 than in any other year of its history, every style an outstanding example of modern design and precision manufacture. That year marked also the beginning of the company's war on obsolescence, a fight which has just started and which will not stop until there is an improved type sewing machine running in place of every obsolete machine now in operation. Even where modernization has not yet been made, the effect of this campaign will mean as much or more in business just as soon as conditions revive. We can be justly proud of what we have done in 1931 and look ahead with confidence to 1932."

J. H. Fisher Returns to Head of Fisher Governor Co.

At a special meeting of the board of directors of Fisher Governor Co., at the main office at Marshalltown, Iowa, Jasper H. Fisher, who has been associated with the company since 1912, was elected president and is now active head of the company. Mr. Fisher has, in his 19 years with the company, served as secretary, president, and for the last two years as chairman of the board.

L. W. Browne, who has been connected with the company for the last 16 years and for the last two years as president, has resigned as president and member of the board but still retains a stock interest.

International Nickel Promotions

T. H. Wickenden, since 1922 in charge of the International Nickel Co.'s development work in the automotive and aeronautical fields, has been appointed assistant manager of development and research.

H. J. French, since 1929 a member of the International Nickel Co.'s research staff at its laboratory in Bayonne, N. J., has been transferred to the development and research department in New York to take charge of development work in steel and iron.

R. L. Suhl, for the last three years assistant to the late Frederick S. Jordan, succeeds him as manager of the nickel sales department of the International Nickel Co., Inc. Ransom Cooper, Jr., Walter C. Kerrigan and Charles McKnight have been appointed as Mr. Suhl's assistants.

C. H. Lang Succeeds M. P. Rice as G. E. Publicity Manager

Chester H. Lang, formerly assistant manager of the publicity department and then comptroller of the budget of the General Electric Co., Schenectady, N. Y., has been appointed manager of the publicity department to succeed Martin P. Rice, who retired Dec. 31 after more than 37 years of service with the company.

Synthane Corp. Augments Research Department

S. W. Place, formerly with the Atwater Kent Design Laboratories, is now connected with the research department of Synthane Corp., Oaks, Pa., manufacturers of Synthane laminated Bakelite, sheets, rods, tubes, fabricated parts and stabilized gears.

QUOTATIONS

close of business, Jan. 6, 1932

Prices cover average qualities unless otherwise stated

Cotton Goods

	Jan. 6	Dec. 29	Jan. 7 1931
PRINT CLOTHS			
27 -in., 64x60, 7.60	2½c.	–2½c.	3¾–3¾c.
38½-in., 64x60, 5.35	3½c.	3½c.	5½c.
39 -in., 68x72, 4.75	3½c.	3½c.	6 c.
39 -in., 72x76, 4.25	4½c.	4½c.	6¾c.
39 -in., 80x80, 4.00	5–5½c.	5–5½c.	7½–8 c.
BROWN SHEETINGS			
36-in., 56x60, 4.00	4c.	4½c.	6c.
36-in., 48x48, 3.00	4½–4c.	4½–4¼c.	6¼c.
37-in., 48x48, 4.00	3¾–4c.	3¾–4 c.	5½–5¾c.
PAJAMA CHECKS			
36½-in., 72x80, 4.70	4¼–4¼c.	4¼–4¼c.	6c.
36 -in., 64x60, 5.75	3¾–3¾c.	3¾c.	5c.
MISCELLANEOUS			
Drills, 37-in., 3 yd..	4¾c.	4¾c.	7¼c.
Denims, 2.20	9¾c.	9¾c.	11¼c.
Tickings, 8 oz.	13 c.	13 c.	16 c.
Standard prints	6¼c.	7 c.	7½c.
Eastern staple ginghams, 27-in.	6¾c.	7¼c.	8 c.

Cotton Waste

Peeler comber	5½ – 5¾
Peeler strips	5¼ – 5½
Sak. comber	4½ – 5
Choice willowed fly	2¾ – 3½
Choice willowed picker	2 – 3
Sak strips	6½ – 7½
Linters (mill run)	2 – 2¾
White spooler (single)	4¼ – 4¾

Cotton Yarn

CARDED (Average Quality)

Double Carded 2c.—4c., higher according to quality

SINGLE SKEINS OR TUBES (Warp Twist)

4s to 8s	$0.13	22s	$0.16
10s	– .13	24s	– .17
12s	– .13½	26s	– .18
16s	– .14½	30s	– .19½
20s	– .15½	40s ex. qual.	– .28

TWO-PLY SKEINS AND TUBES

8s-2	$0.13½	26s-2	$0.18½
10s-2	– .13½	30s-2	19– .19½
12s-2	– .14	36s-2	– .25
14s-2	– .14½	40s-2	– .26
16s-2	– .15	40s-hi.brk.	– .29
20s-2	15 – .16	50s-2	– .34
24s-2	17½– .18	60s-2	– .37

SINGLE WARPS

10s	$0.13	24s	$0.17
12s	– .13½	26s	– .18
14s	– .14	30s	– .19½
16s	– .14½	40s. ex.qual.	– .28
20s	15 – .15½		

TWO-PLY WARPS

8s-2	$0.13½	24s-2	$0.17½
10s-2	.13½	26s-2	– .18½
12s-2	.14	30s-2	.19 – .20
14s-2	.14½	40s-2 ordin.	– .27
16s-2	.15	50s-2	– .34
20s-2	.15½– .16	60s-2	– .37

8s-2 and 4-ply skeins and tubes; tinged, 12; white, 13; waste, 11½

HOSIERY CONES (Frame Spun)

8s	$0.13	22s	$0.16
10s	– .13	24s	– .17
12s	– .13½	26s	.18
14s	– .14	30s tying	– .18½
16s	– .14½	30s reg.	– .20
18s	– .15	30s ex.qual.	– .21
20s	– .15½	40s	– .26

COMBED PEELER (Average Quality)

TWO-PLY—(Knitting Twist) Cones

20s-2	$0.25	60s-2	$0.38 – .39
30s-2	– .26	70s-2	– .50
36s-2	– .29	80s-2	– .60
40s-2	– .30	90s-2	– .85
50s-2	.32 – .35	100s-2	.95 –1.03

WARPS, SKEINS AND CONES

TWO-PLY—(Warp Twist)

20s-2	$0.25	60s-2	$0.38 –0.40
30s-2	– .27	70s-2	.50 – .52
36s-2	– .30	80s-2	.60 – .62
40s-2	.31 – .32	90s-2	.85 – .90
50s-2	.33 – .35	100s-2	.95 –1.02

SINGLES

12s	$0.18½	30s	$0.26
14s	– .19	36s	– .28
16s	– .19½	40s	.29 – .30
18s	– .20	50s	– .32
20s	– .21	60s	.38 – .40
24s	– .23	70s	.50 – .52
28s	– .25	80s	.60 – .63

MERCERIZED CONES—(Combed, Ungassed)

26s-2	$0.36½–0.38½	90s-2	$0.90
30s-2	.38 – .40	100s-2	1.15–1.25
36s-2	.40 – .42	120s-2	1.50–1.60
40s-2	.42 – .44	30s	.51– .52
45s-2	.42½– .44½	40s	– .56
50s-2	.45 – .47	50s	.61– .64
60s-2	.48 – .52	60s	.70– .73
70s-2	.64 – .66	70s	.80– .83
80s-2	.73 – .75	80s	.92– .96

Cotton Prices and Statistics

COTTON STATISTICAL DATA

(Fluctuations of Futures)

	Closed Dec. 30	For Week High	For Week Low	Closed Jan. 6	Net Ch'ge
January	6.38	6.40	6.10	6.30	—.08
February	6.43	6.43	6.17	6.34	—.09
March	6.50	6.53	6.21	6.39	—.11
April	6.57	6.57	6.30	6.47	—.10
May	6.67	6.71	6.37	6.56	—.11
June	6.74	6.74	6.47	6.65	—.09
July	6.85	6.89	6.55	6.75	—.10
August	6.96	6.96	6.66	6.83	—.13
September	7.00	7.00	6.75	6.90	—.10
October	7.08	7.13	6.79	6.98	—.10
November	7.14	7.14	6.89	7.04	—.10
December	7.23	7.31	6.96	7.12	—.11

SPOT FLUCTUATIONS FOR WEEK

(Middling)

	New York	New Orleans	Liverpool
Wednesday, Dec. 30	6.55	6.38	5.35
Thursday, Dec. 31	6.50	6.31	5.39
Friday, Jan. 1	Holiday	Holiday	Holiday
Saturday, Jan. 2	Holiday	Holiday	Holiday
Monday, Jan. 4	6.25	6.08	5.34
Tuesday, Jan. 5	6.35	6.13	5.27
Wednesday, Jan. 6	6.45	6.26	5.28

FOREIGN COTTONS

Egyptian Cotton

Alexandria Exchange, Jan. 5.

		Change
Jan. Sak	12.09	—0.14
Feb. Uppers	9.77	+0.14

Jan.-Feb. Shipment c. i. f. Boston (Tariff not included)

Fully good fair Sak (No. 38)	11.50
Fully good fair to good Uppers (No. 10)	9.25

(By Anderson, Clayton & Co.)

Foreign cottons F. O. B. New York, Cents	
Peruvian Tanguis Strict Middling	17½
Peruvian Pima No. 1	16
Peruvian Moderate Rough	13
Peruvian Full Rough	17
China Tientsin No. 1	10
India Rough	7 to 9½
India Smooth	6½ to 8½

(By Bruns-Nordeman Co.)

MOVEMENT INTO SIGHT

	This Year	Last Year	Year Before Last
Week	330,000	171,000	238,000
Season	10,108,000	10,264,000	11,081,000

WORLD VISIBLE SUPPLY

	Jan. 1	One Year Ago
Interior towns and ports of U.S.*	6,870,000	5,887,000
Afloat to and at ports of Europe	1,560,000	2,004,000
Afloat to and at ports of Orient.	856,000	335,000
Total	9,286,000	8,226,000
Change during week	Increase 37,000	Increase 4,000

*Includes afloat to New York.

FORWARDINGS TO MILLS OF WORLD

	This Year Week	This Year Season	Last Year Week	Last Year Season
No. States, U.S.	19,000	390,000	19,000	398,000
So. States, U.S.	75,000	2,379,000	67,000	2,070,000
Total U.S.	94,000	2,769,000	86,000	2,468,000
Great Britain	25,000	502,000	15,000	392,000
Continent	78,000	1,396,000	53,000	1,581,000
Orient	90,000	1,227,000	17,000	521,000
Canada and other America	6,000	95,000	4,000	113,000
Total foreign countries	199,000	3,220,000	89,000	2,607,000
World total	293,000	5,989,000	175,000	5,075,000

EXPORTS FROM UNITED STATES

Total	188,000	4,005,000	167,000	3,972,000

AVERAGE PRICE JAN.-FEB., SHIPMENT HARD WESTERN COTTON

F.o.b. New England

	Middling	St. Middling
1 1/16-in.	8 – 8¼c.	8¼– 8¾c.
1⅛-in.	8¾– 9¼c.	9¼– 9¾c.
1 3/16-in.	9¾–10¼c.	10¼–11c.
1¼-in.	12½–13½c.	13½–14½c.

Basis on New York, March, 6.27.

SPOT FLUCTUATIONS AND STOCKS

Markets	Dec. 29	Jan. 6	Sales	This Week	Last Year
Galveston	6.40	6.25	2,920	941,987	675,915
New Orleans	6.34	6.26	11,138	903,491	775,095
Mobile	5.90	5.85	4,427	231,466	177,737
Savannah	6.22	6.14	2,347	302,496	314,831
Norfolk	6.38	6.25	560	70,226	97,624
New York	6.55	6.45	1,780	220,885	230,983
Augusta	6.19	6.06	1,251	136,200	126,329
Memphis	5.75	5.65	42,996	493,804	391,790
St. Louis	5.90	5.80	.....	.....	13,702
Houston	6.30	6.20	36,426	1,617,988	1,461,671
Dallas	5.90	5.80	59,074	49,721	32,373

DIFFERENCES ON AND OFF MIDDLING WHITE GRADES

	Dallas	Memphis	Montgomery	Augusta	Average
M.F	0.65†	.75†	0.75†	0.75†	0.72†
S.G.M	.50†	.50†	.65†	.63†	.57†
G.M	.40†	.40†	.45†	.44†	.42†
S.M	.25†	.25†	.25†	.25†	.25†
S.L.M	.25*	.20*	.25*	.25*	.26*
L.M	.50*	.50*	.55*	.50*	.60*
S.G.O.**	.75*	.75*	.90*	.88*	.92*
G.O	1.00*	1.00*	1.25*	1.25*	1.27*
YELLOW TINGED					
G.M	0.30*	0.25*	0.30*	0.31*	0.29*
S.M	.45*	.40*	.45*	.44*	.47*
M.**	.65*	.50*	.65*	.50*	.67*
S.L.M	1.00*	.90*	1.00*	.88*	1.03*
L.M	1.35*	1.40*	1.35*	1.25*	1.41*
YELLOW STAINED					
G.M	0.65*	0.60*	0.65*	0.50*	0.68*
S.M.**	.90*	1.10*	.90*	.75*	.97*
M.**	1.35*	1.35*	1.35*	1.25*	1.42*
BLUE STAINED					
G.M.**	0.65*	0.35*	0.65*	0.50*	0.66*
S.M.**	1.00*	.85*	1.00*	.88*	1.02*
M.**	1.35*	1.10*	1.35*	1.25*	1.39*

**Grades not deliverable on contract.

*Off Middling. † On Middling

Wool

OHIO, PENNSYLVANIA AND WEST VIRGINIA (IN GREASE)

Fine delne...	$0.24 –$0.25	¾ blood...	$0.23 –0.24
Fine clthg...	.20 – .21	½ blood...	.21 – .21½
¼ blood...	.23 – .24		

TEXAS AND CALIFORNIA (CLEAN BASIS)

Texas, 12 months	$0.54 –0.56
California, Northern	.46 – .48

PULLED—EASTERN (CLEAN BASIS)

A.A.	$0.58 –$0.60	B-Super...	$0.43 –0.45
A-Super...	.48 – .50	C-Super...	.38 – .40

MONTANA, IDAHO AND WYOMING (CLEAN BASIS)

Staple fine	$0.57 –0.59
Staple ½ bld.	.54 – .55
Fine and fine medium	.52 – .55
½ blood	.48 – .50
¼ blood	.41 – .43

MOHAIR—DOMESTIC

Best carding	$0.25 –0.28
Best combing	.32 – .35

MOHAIR FOREIGN (IN BOND)

Turkey fair, average	$0.17 –0.21
Cape firsts	.18 – .21

FOREIGN CLOTHING AND COMBING (CLEAN BASIS IN BOND)

Australia:	
7s	$0.43 –0.45
64s	.36 – .38
58s-60s	.31 – .33

(IN GREASE)

Montevideo:	
58s-60s	$0.17 –0.18
56s	.16 – .17
50s	.15 – .16
Buenos Aires:	
4s, 40-44s	$0.10 –0.11
5s, 36-40s	.09 – .10

FOREIGN CARPET (GREASE BASIS IN BOND)

Aleppo washed	$0.19 –0.20
China: Combing No. 1	.12 – .13
China Filling Fleece	.11 – .12
Szechuen ass't	.12 – .13
Cordova	.09 – .10
Scotch black face (nominal)	.14 – .16
East India: Kandahar	.15 – .16
Vican'r	.19 – .20
Joria	.19 – .20

Worsted Yarns

ENGLISH SYSTEM WEAVING

2-20s 36s	$0.75
2-24s 40s	– .80
2-26s 44s	.82½– .85
2-28s 46s	– .87½
2-30s 48s	.92½– .95
2-32s 50s	.97½–1.00
2-30s 64s fancy mixes	1.30 –1.32½

(Single yarns 5c. less than above)

2-36s 58s	1.05
2-40s, 60s	–1.20
2-40s, 64s	1.27½–1.32½
2-50s, 66s	1.40 –1.45
2-60s, 70s	1.82½–1.85

ENGLISH SYSTEM KNITTING

2-20s, 44s in oil	$0.70 – .72½
2-20s, 48s in oil	.72½– .75
2-20s, 50s in oil	.75 – .77½
2-20s, 56s in oil	.92½– .95
2-20s, 60s in oil	–1.00
2-20s, 64s in oil	1.12½–1.15
1-18s, 48s dyed	– .90
1-18s, 50s dyed	.90 – .92½

(Oil yarns 17½c. less)

FRENCH SYSTEM

1-20s, 58s	.97½–1.00
1-20s, 60s	1.02½–1.05
1-18s, 64s, dyed	1.25 –1.27½
1-26s, 64s	1.07½–1.10
1-30s, 66s, Warp	1.12½–1.15
1-30s, 64s, Warp	1.15 –1.17½
2-30s, 64s, Fancy mixes	1.32½–1.35
2-40s, 64s, Zephyrs	1.27½–1.30
1-50s, 66s	1.42½–1.47½
2-50s, 66s	1.45 –1.50
1-60s, 70s	1.75 –1.80
2-60s, 70s	1.90 –1.95

FRENCH SPUN MERINO WHITE

1-30s, 50-50-58s on cops	$0.90 – .95
1-40s, 50-50-60s on cops	1.00 –1.02½
1-40s, 50-50-64s on cops	1.02½–1.05
1-40s, 50-50-64s Australian cops	1.10 –1.15

Underwear mixes, 3 to 5c., Solid color, 35c. additional.

New York Top Futures

	Closed Dec. 22	For Week—High	Low	Closed Jan. 5	Net Ch'ge
January	67.50	68.00	67.50	68.00	+0.50
February	67.40	68.00	67.40	68.00	+0.60
March	67.50	68.20	67.50	68.00	+0.50
April	67.50	68.00	67.00	68.00	+0.50
May	67.50	68.00	67.00	68.00	+0.50
June	67.50	68.00	67.00	68.00	+0.50
July	67.50	68.20	67.50	68.00	+0.50
August	67.50	68.00	67.00	68.00	+0.50
September	67.50	68.00	67.00	68.00	+0.50
October	67.50	68.00	67.00	68.00	+0.50
November	67.50	68.00	67.00	68.00	+0.50
December	.....	68.00	67.50	68.00	.....

Tops and Noils

TOPS —BOSTON

Fine (64-66s)	$0.78 –0.79
Half-blood (60-62s)	.72 – .75
High ¾ blood (58s)	.67 – .69
Aver. ¾ blood (56s)	.61 – .64
Low ¾ blood	.57 – .58
High ½ blood (50s)	.51 – .53
46s S. A. and N. Z.	.56 – .58
44s S. A. and N. Z.	.51 – .53
40s S. A. and N. Z.	.48 – .50

TOPS — BRADFORD, ENG. (JAN. 2)

Fine (70s)	26 d	¾ bld. (56s)	18
Fine (64s)	24 d	½ bld. (50s)	13½d
¼ bld. (60s)	23 d	Cross-bred (46s)	11 d

NOILS — BOSTON

Fine	$0.31 –$0.34	High ½ bld.	$0.27 –$0.28
Half-bld.	.30 – .31	Low noils	.21 – .23
Aver. ¾ bld.	.27 – .29	Medium	
Fine colored	.30 – .31	colored	.22 – .24

Wool Substitutes

WOOL WASTE

Lap, fine white	$0.55 – .58
Lap, fine colored	.40 – .43
Hard ends, fine white	.41 – .43
Hard ends, ¼ blood white	.30 – .32
Hard ends, fine colred	.18 – .20
Hard ends, medium colored	.13 – .15
Card, fine white	.22 – .24
Burr, fine carbonized	.23 – .25

OLD WOOLEN RAGS (GRADED FOR MFRS.)

Merinos, coarse light	$0.04½–0.05
Merinos, fine dark	.02½– .03
Merinos, fine light	.08½– .09½
Serges, blue	.04½– .05
Serges, black	.04½– .05
Serges, red	.07½– .08
Knit, white	.20½– .21½
Knit, red	.08 – .08½
Knit, light hoods	.08½– .09
Worsted, light	.03½– .04
Worsted, blue	.05 – .05½
Worsted, black	.05½– .06

Silk Yarns

THROWN SILK (60 day basis)
Prices Nominal

Japan organzine, 2 thd. spec. gd. XX sk 85%..	$3.25
Japan organzine, 2 thd. grand sk. 83%	3.05
Japan organzine, 2 thd. sp. crack. sk. 81%	2.90
Japan crepe, 3 thd. gd. XX bob. 83%	3.05
Japan crepe, 3 thd. sp. crack. bob. 81%	2.95
Japan grenadine, 4 thd. sp. grand singles, 87%	4.15
Japan grenadine, 3 thd. 90%	5.05
Canton crepe, 3 and 4 thd. 14/16 on bobbins...	2.20
Hosiery tram, 3 thd. Japan 90%	3.90
Hosiery tram 5 thd, Japan, 85%	2.95
Hosiery tram, crack XX 78%	2.65

SPUN SILK YARNS (Terms: net 30)

40/2	$3.10	60/2	$3.45
54/2	3.30	62/1	2.35

Raw Silk

(60 Day Terms. Spot Goods)
Prices Nominal

	13/15 White	20/22 White	20/22 Yellow
Super Grand, 87%	$2.50	$2.00	$2.05
Special Grand, 85%	2.30	1.95	2.00
Grand XX, 83%	2.15	1.90	1.95
Special Crack, 81%	2.00	1.85	1.90
Crack XX, 78%	1.90	1.80	1.80
Extra Extra, 73%	1.80	....	....
Best Extra, 68%	1.75	....	....

Canton filature, new style, 14/16	$1.65
Canton filature, new style, 20/22	1.60
Tussah filature, 8 cocoon	.90

NATIONAL RAW SILK EXCHANGE

	Close Dec. 29	For the Week High	Low	Close Jan. 5	Net Ch'ge
January	1.64	1.70	1.55	1.72	+.08
February	1.71	1.76	1.70	1.75	+.04
March	1.74	1.78	1.70	1.78	+.04
April	1.76	1.81	1.76	1.77	+.01
May	1.76	1.81	1.70	1.77	+.01
June	1.76	1.81	1.70	1.75	—.01
July	1.76	1.80	1.71	1.75	—.01
August	1.76	1.80	1.70	1.75	—.01

Total number of bales, 6,970. Total approximate value, $1,807,669.50. Trading unit crack XX 13/15 white 78%.

Domestic Rayon

VISCOSE PROCESS

Denier	Filament	First	Second
30	8	$2.25	...
50	12–18	1.35	$1.25
75	18–30	1.20	1.10
100	18–40	1.00	.90
125	36–50	.90	.80
150	30	.72	.70
150	24–44	.75	.72
150	60	.85	.82
150	75–90	.85	.82
170	24–27	.75	.72
170	60	.85	.82
200	30–42	.75	.72
300	42–62	.63	.60
450	42–72	.63	.60
600	72–96	.63	.60
900	100–144	.63	.60

NITRO-CELLULOSE PROCESS

Denier	First Qual.	Second Qual.	Denier	First Qual.	Second Qual.
75	$1.35	$1.25	150	$0.75	$0.72
100	1.05	.95	175	.75	.72
125	.95	85			

CUPRAMMONIUM PROCESS

Denier	Filament	Price	Denier	Filament	Price
15	24	$3.10	75	60	$1.30
25	24	2.85	80	60	1.30
30	24	2.60	100	75	1.10
40	30	1.70	120	90	1.00
52	30	1.50	150	112	.90
65	45	1.40	180	135	.87

ACETATE PROCESS

Denier	Price	Denier	Price
45	$1.60	125	$1.10
60	1.50	150	1.00
75	1.40	300	1.00
100	1.30		

Rayon Waste

Open bleached waste	$0.13–	$0.14
Open bleached waste		.10½
Bleached thread waste (mfs.)		.09
Bleached thread waste (misc.)	.06–	.07
Colored thread waste	.03–	.04
Colored clips	.03–	.04

CONVERTED RAYON WASTE

Bleached tops	$0.30–	$0.32½
Unbleached tops	.27–	.28
Bleached noils		.11
Unbleached noils		.09½
Bleached garnetts		.12
Unbleached garnetts		.13
Colored garnetts	.10–	.11

Silk Waste

Kibizzo Kakai Grand XX	$0.50
Kibizzo Kakai Triple Extra	.44
Frison Grand Double	.49
Pierced Cocoons	.50

PROFITS WITHIN

To purchase machinery built with Alemite High Pressure Lubrication Systems is to purchase a new profit maker within your former profits.

To adapt present equipment in the modern, Alemite High Pressure way is to gain new and hitherto impossible profits.

No one today can point out a single advantage in the obsolete oil hole and grease cup type of lubrication.

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